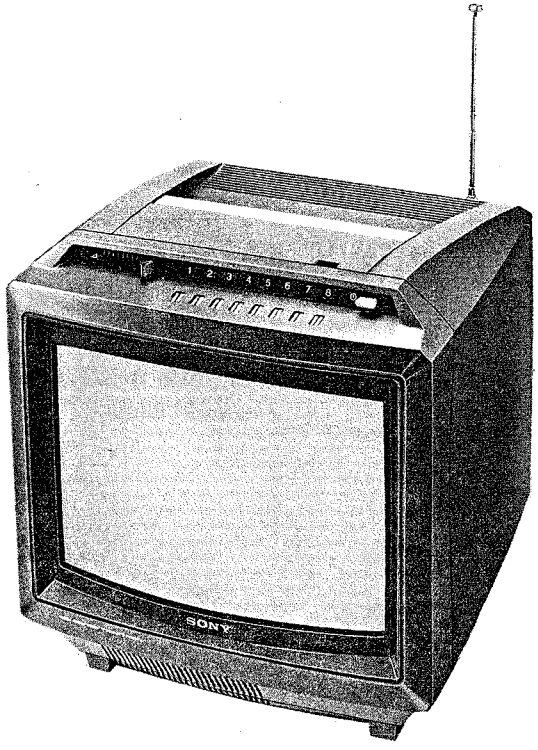
937

KV-1400E

Chassis No. SCC-192A-A



TRINITRON® COLOR TV

WARNUNG !!

UM ELEKTRISCHE SCHLÄGE ZU VERMEIDEN, SOWIE MESSGERÄTE BEI REPARATUREN VOR ZERSTÖRUNG ZU SCHÜTZEN, DARF DAS GERÄT BEI ABGENOMMENER RÜCKWAND NUR ÜBER EINEN ENTSPRECHEND DIMENSIONIERTEN TRENNTRANSFORMATOR BETRIEBEN WERDEN.

WARNING!!

TO ELIMINATE SHOCK HAZARD AND PROTECT EQUIPMENT WHEN SERVICING THE SET WITH THE COVERS REMOVED, MAKE SURE THAT THE SET IS PLUGGED INTO A SUITABLY-RATED ISOLATION TRANSFORMER.

SICHERHEITSHINWEIS FÜR KOMPONENTEN !!

DIE IN DEN SCHALTBILDERN, DEN IN EINZELTEILE AUFGELÖSTEN PERSPEKTIVISCHEN ZEICHNUNGEN UND DEN TEILELISTEN SCHRAFFIERT EINGEZEICHNETE UND DURCH DAS ZEICHEN ⚠ GEKENNZEICHNETE KOMPONENTEN SIND FÜR DIE BETRIEBSSICHERHEIT KRITISCH. DIESE KOMPONENTEN SIND DURCH SOLCHE SONY TEILE ZU ERSETZEN, DEREN TEILENUMMERN IN DIESEM HANDBUCH ODER IN VON SONY HERAUSGEGEBENEN ERGÄNZUNGEN ANGEGEBEN SIND.
AUF FÜR DIE BETRIEBSSICHERHEIT KRITISCHE SCHALTUNGSEINSTELLUNGEN WIRD IN DIESEM HANDBUCH HINGEWIESEN.
BEFOLGEN SIE DIESE ANWEISUNGEN STETS, WENN KRITISCHE KOMPONENTEN AUSGEWECHSELT WERDEN ODER VERDACHT AUF FUNKTIONSSTÖRUNGEN BESTEHT.

DIE BESCHLEUNIGUNGSSPANNUNG DARF NICHT ERHÖHT WERDEN, DAMIT KEINE SCHÄDLICHEN RÖNTGENSTRAHLUNGEN ERZEUGT WERDEN. SIE SOLL 25,5 ± 1 kV BETRAGEN.

GEPRÜFT NACH RÖNTGENVERORDNUNG V.1.3.76:
ZULASSUNGSSCHEIN NR.: HH/13/78/RÖ.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SONY®

SERVICE MANUAL

937

SPECIFICATIONS

Television System: CCIR system B, G and H

Color System: PAL

Picture Tube: 35 cm, 14" (33 cm screen measured diagonally), 90° deflection TRINITRON system

Semiconductors: 51 transistors, 1 FET, 7 ICs and 56 diodes

Antennas: VHF/UHF telescopic antenna
75Ω standard antenna socket

Channel Coverage: VHF channels: E2–4 (Band I)
VHF channels: E5–12 (Band III)
UHF channels: E21–68 (Band IV/V)

Intermediate Frequencies: Picture i-f carrier: 38.9 MHz
Color subcarrier: 34.47 MHz
Sound i-f carrier: 33.4 MHz

Sound System: 5.5 MHz intercarrier
Output power: 2W (at 10% harmonic distortion)
Speaker: 12 x 8 cm (4¾ x 3 inches) oval, 8Ω

Video System: R,G,B cathode drive

Automatic Controls: ABL (automatic brightness limiter)
ACC (automatic color control)
ACK (automatic color killer)
ADG (automatic degaussing)
AFC (automatic frequency control)
AFT (automatic fine tuning)
AGC (automatic gain control)
ANC (automatic noise canceller)
APC (automatic phase control)
AVR (automatic voltage regulator)

Anode Voltage: 21 kV at zero beam current

Hochspannung: 21 kV bei 0 mA Strahlstrom

Power Requirements: 220–240V ac, 50 Hz

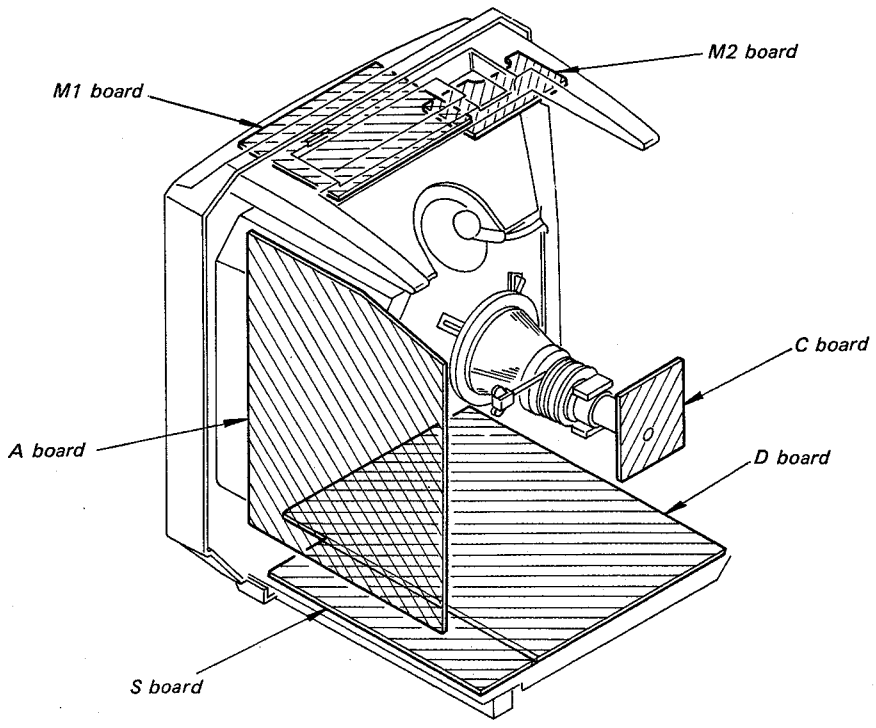
Power Consumption: 59W ac

Dimensions: Approx. 353 (w) x 377 (h) x 385 (d) mm
13 7/8 (w) x 14 7/8 (h) x 15 1/8 (d) inches

Net Weight: Approx. 13 kg, 28 lb 11 oz

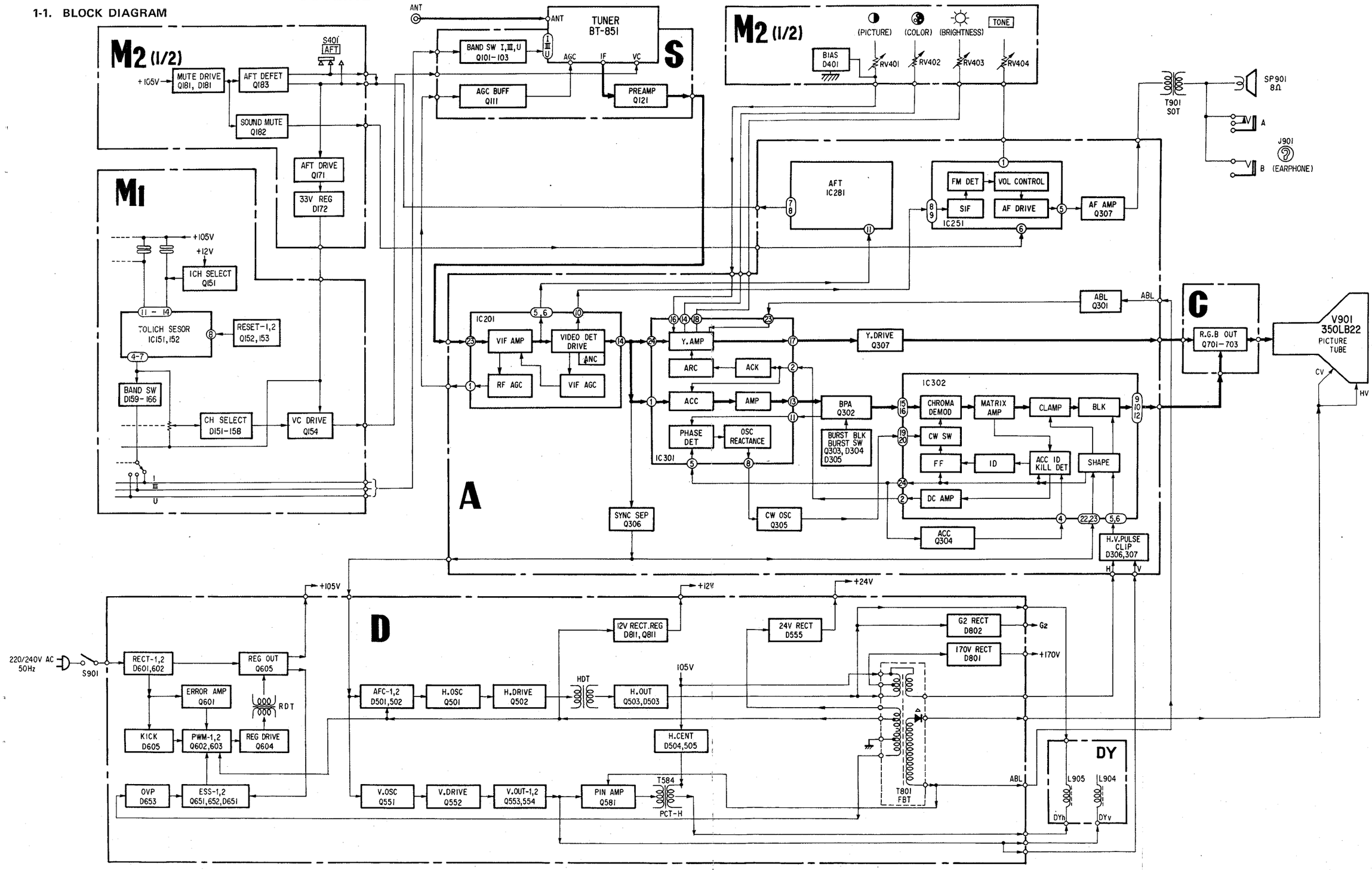
Accessories Supplied: Earphone (ME-20E)
Instruction manual

CIRCUIT BOARDS LOCATION



SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



1-2. POWER SUPPLY CIRCUIT

This set uses a choke-coupled flyback converter SMR (Switching Mode Regulator) power supply circuit.

The principal point of this power supply circuit is that the anode side of the bridge rectifier is connected to the B+ line (105V line). Take care not to connect the anode side of bridge rectifier to ground. And this circuit excels the power supply circuit of KV-1340E in efficiency. For example, the power consumption of KV-1340E is 78W, and that of KV-1400E is 59W.

Operations of each component according to each period are explained below.

1-2-1. Basic Operations (Figs. 1-1 and 1-2)

1. t0–t1
   A positive bias from T602 (RDT) is applied to the base of Q605 and Q605 is turned on. The current I1 flows in the loop of Q605, L603 and C606, and energy is stored in L603.
2. t1–t2
   The negative bias from T602 is applied to the base of Q605, and Q605 is turned off. So the current I1 suddenly becomes zero, the counter-electromotive force, which intends to prevent the sudden variation of the current I1, appears in L603 due to its self-induction. The current I2 flows in the loop of L603, C621 and D606, and this current charges C621.
3. t2–t3
   Q605 turns on again, and the current I1 flows. The energy of the current I1 is stored in L603 and the energy stored in C621 is supplied to the load.

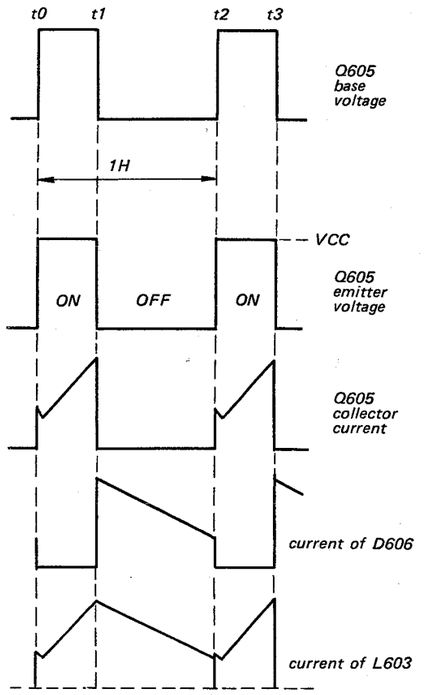


Fig. 1-2

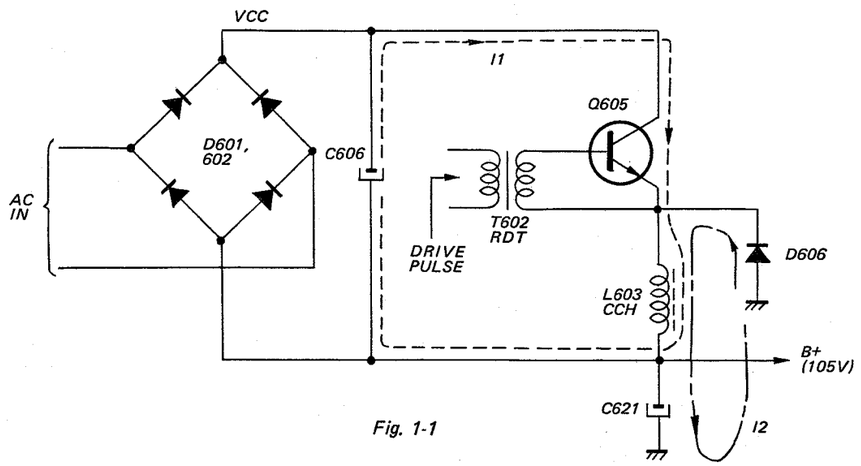


Fig. 1-1

1-2-2. PWM (Pulse Width Modulation) Circuit (Figs. 1-3 and 1-4)

1. The horizontal deflection pulses from T801 (FBT) turn Q602 off (Q603 on).
2. The current from Q601 collector charges C610 for the time-constant of R611 and C610.
3. When C610 is charged up to a certain voltage, Q602 turns on and the charged voltage of C611 flows through Q602. So the negative pulse is applied to the base of Q603, and Q603 turns off.
4. Then the horizontal deflection pulse turns Q602 on again.
5. So, Q602 turns on and off repeatedly.
6. The on-off pulses produced at Q602 are applied to the base of Q605 via Q604 and T602.
7. Q605 turns on and off repeatedly and applies the current to L603.
8. D604 prevents C611 from charging up through R613.

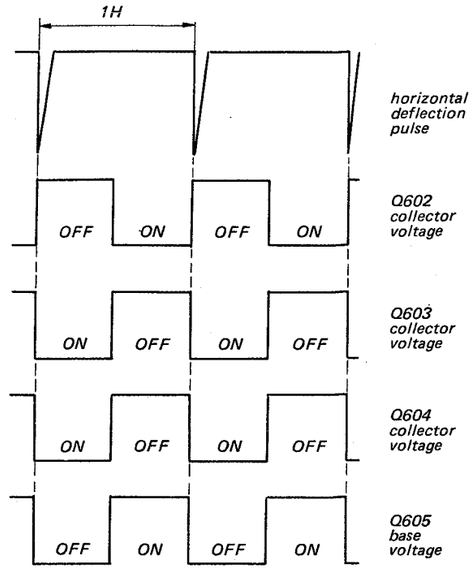


Fig. 1-3

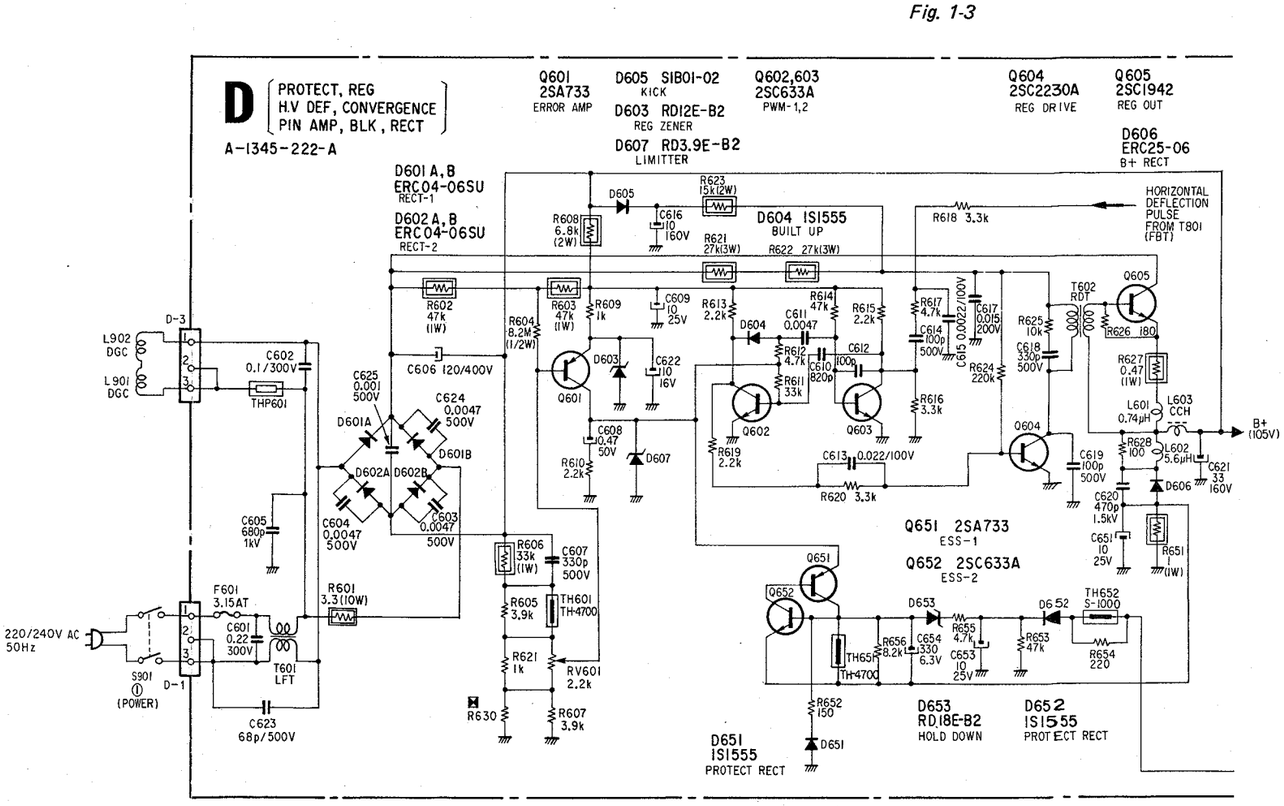


Fig. 1-4

1-2-3. Error Amplifier Circuit (Figs. 1-4 and 1-5)

1. When the B+ line voltage drops, the base voltage of Q601 drops too.
2. The collector voltage of Q601 rises and the Q602-off period becomes short.
3. Q604-on period becomes short and Q605-on period long.
4. So, the energy stored in L603 increases and the voltage on C621 rises.
5. When the B+ line voltage rises, the base voltage of Q601 rises. And the Q605-on period is short, so the voltage on C621 decreases.

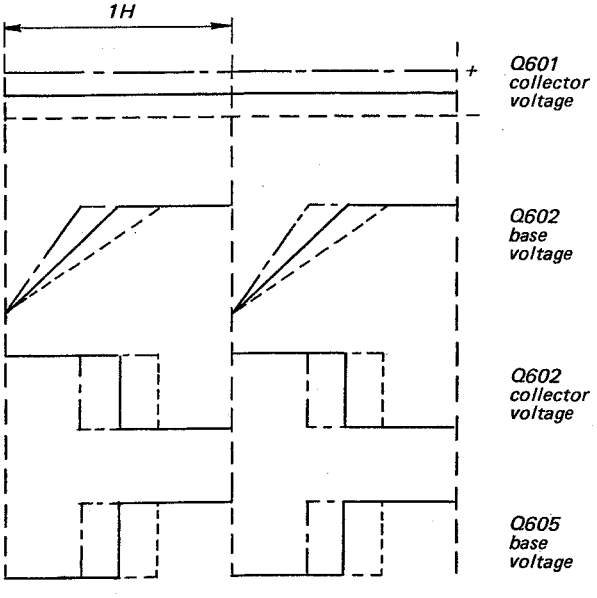


Fig. 1-5

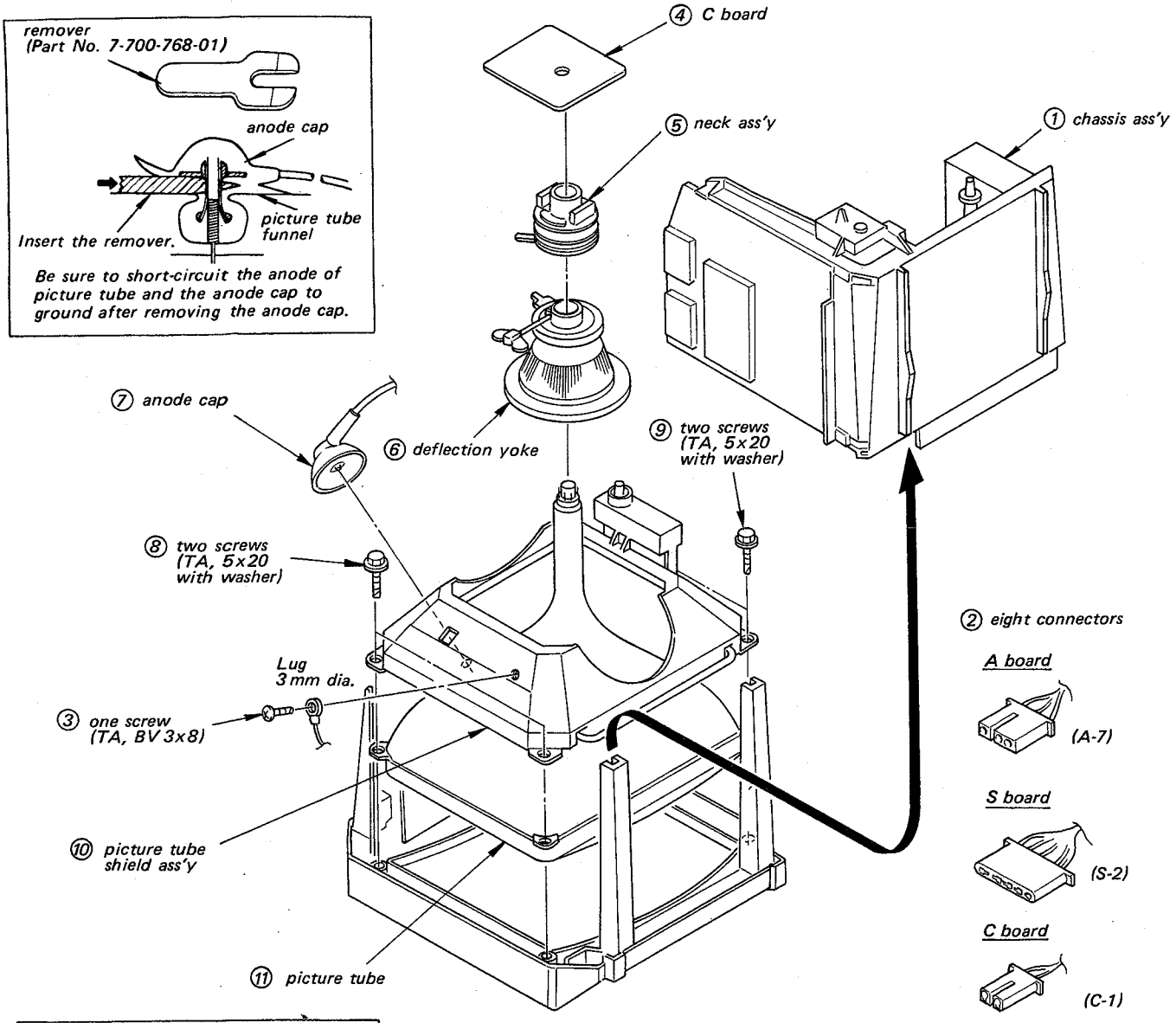
1-2-4. Start of Power Supply Circuit (Fig. 1-4)

1. When the set is switched on, the voltage rectified by D601 and D602 is applied to Q601 through Q605.
2. Q602 and Q603 become to operate as an astable multiviblator.
3. The on-off pulses produced at Q602 make Q605 on and off repeatedly. So the B+ voltage is applied to the load.
   (Refer to the Basic Operation).
4. The horizontal oscillation circuit becomes to operate.
5. The horizontal deflection pulses from T801 are applied to the base of Q602 and the normal operation of the power supply circuit becomes to start.

SECTION 2
DISASSEMBLY

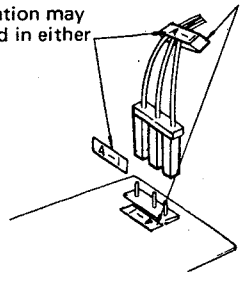
Note:
- Follow the disassembly procedure in the numerical order given.
- When removing the rear cover, take out all the screws around marked ⇒ on it.
- All screws are Phillips (cross recess) type unless otherwise noted.

2-1. PICTURE TUBE REMOVAL



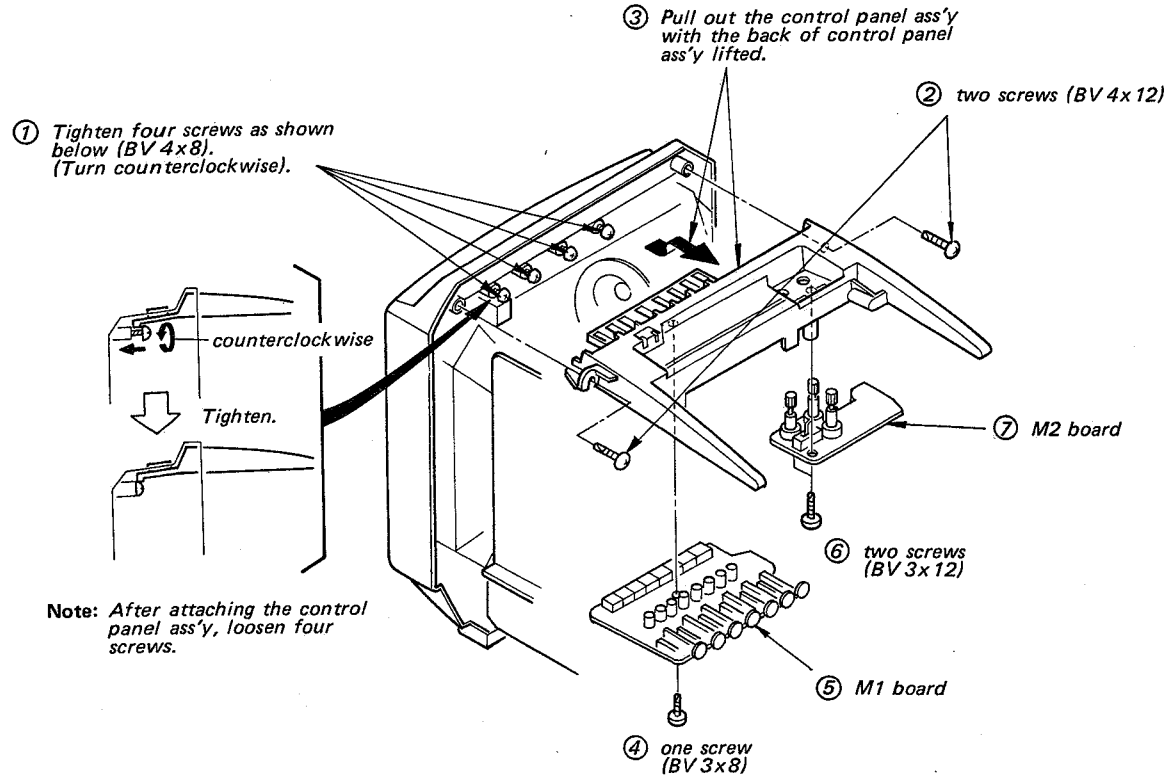
— Note —

Identification may be located in either position.

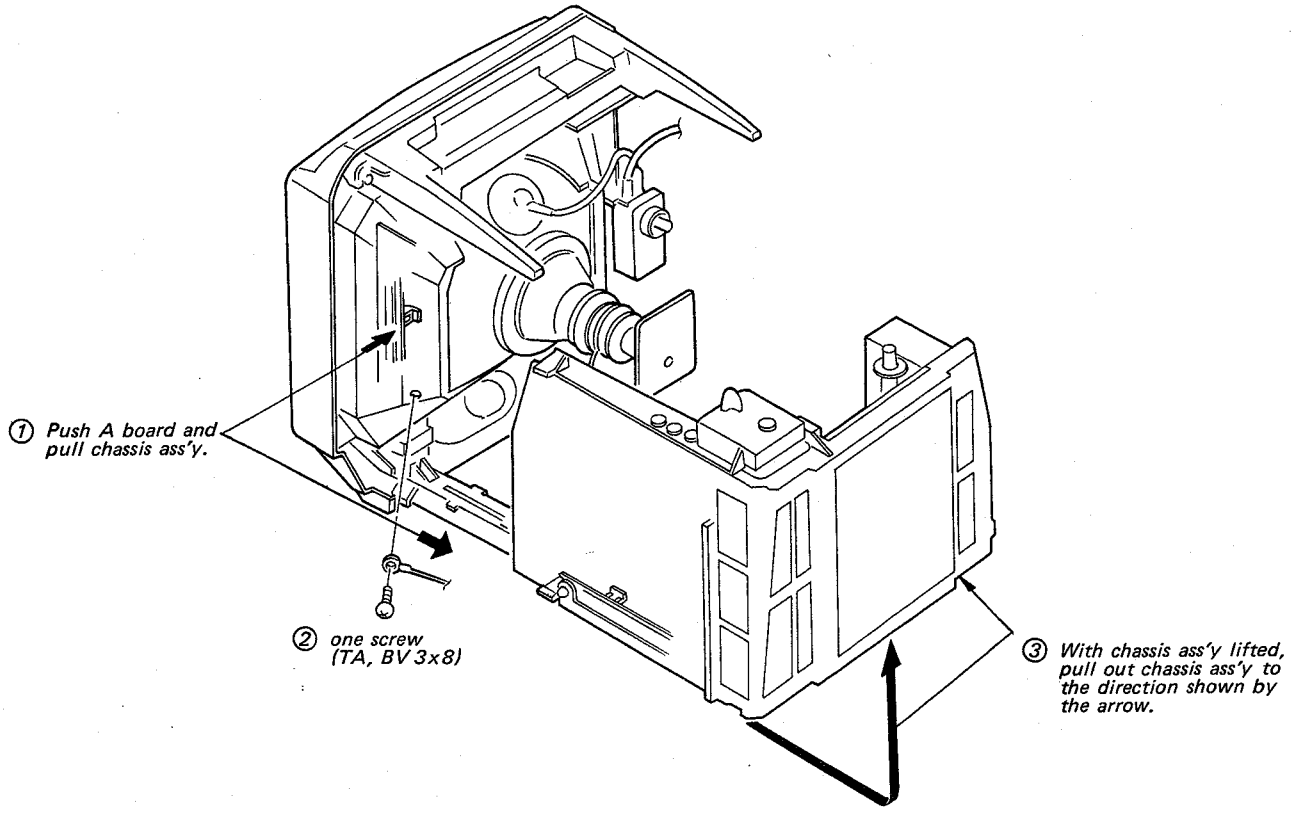


This set uses connectors for junction between circuit boards. Before plugging them in, check that the number of the plug matches the number of the receptacle as illustrated above.

2-2. M1 AND M2 BOARDS REMOVAL


③ Pull out the control panel ass'y with the back of control panel ass'y lifted.
② two screws (BV 4x 12)
① Tighten four screws as shown below (BV 4x8). (Turn counterclockwise).
counterclockwise
Tighten.
⑦ M2 board
⑥ two screws (BV 3x 12)
⑤ M1 board
④ one screw (BV 3x8)
Note: After attaching the control panel ass'y, loosen four screws.

2-3. CHASSIS ASS'Y REMOVAL


① Push A board and pull chassis ass'y.
② one screw (TA, BV 3x8)
③ With chassis ass'y lifted, pull out chassis ass'y to the direction shown by the arrow.

SECTION 3
SETUP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control ..... maximum (fully clockwise)
BRIGHTNESS control ..... maximum (fully clockwise)
AFT switch ..... ON

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. White Balance

Note: Test Equipment Required.
1. Color-bar/Pattern Generator
2. Degausser

3-1. BEAM LANDING

Preparation:
- Feed in the white pattern.
- Before starting, degauss the entire screen.

1. Loosen deflection yoke screw.
2. Adjust purity control as shown in Fig. 3-1.
3. Slide deflection yoke as far forward as it will go.
4. Position neck ass'y as shown in Fig. 3-2.
5. Disconnect leads ❹ and ❺ on the C board.
6. Adjust purity control to center vertical red band as shown in Fig. 3-3.
7. Slide deflection yoke back for a uniform red screen.
8. Check green and blue rasters for uniformity by performing the same way as steps 5, 6 and 7.
   To get a uniform green screen, connect lead ❹ on the C board and disconnect leads ❸ and ❺.
   To get a uniform blue screen, connect lead ❺ on the C board and disconnect leads ❸ and ❹.
   After these checks, connect the leads ❸, ❹ and ❺.
9. Tighten the deflection yoke screw.
10. Check if mislanding appears at corners a–d as shown in Fig. 3-4. If mislanding is observed, correct it as shown in Fig. 3-4.
11. Confirm that beam landing is correct when the receiver is faced in all directions.

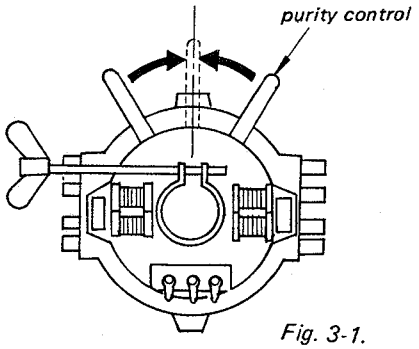


Fig. 3-1.

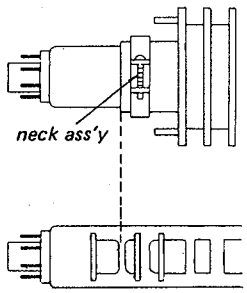


Fig. 3-2.

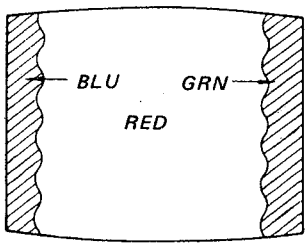


Fig. 3-3.

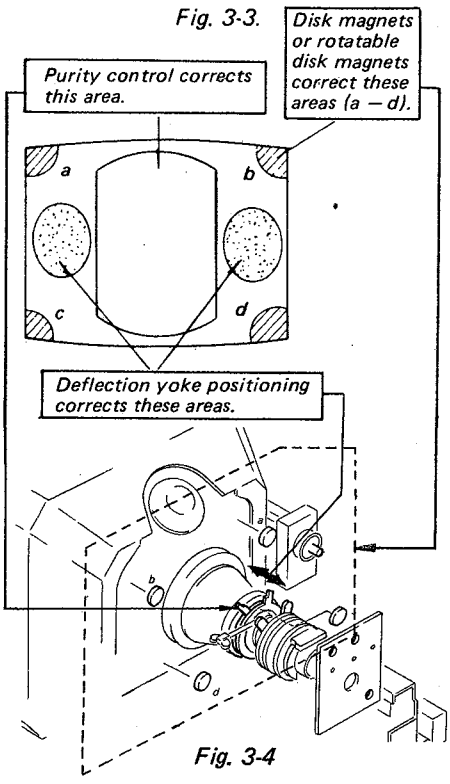
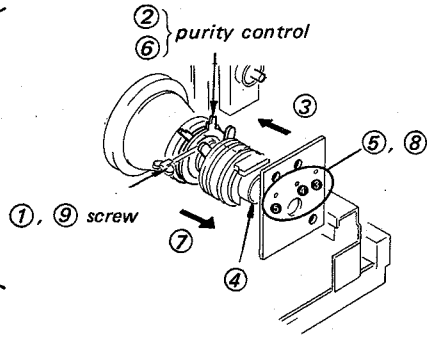


Fig. 3-4



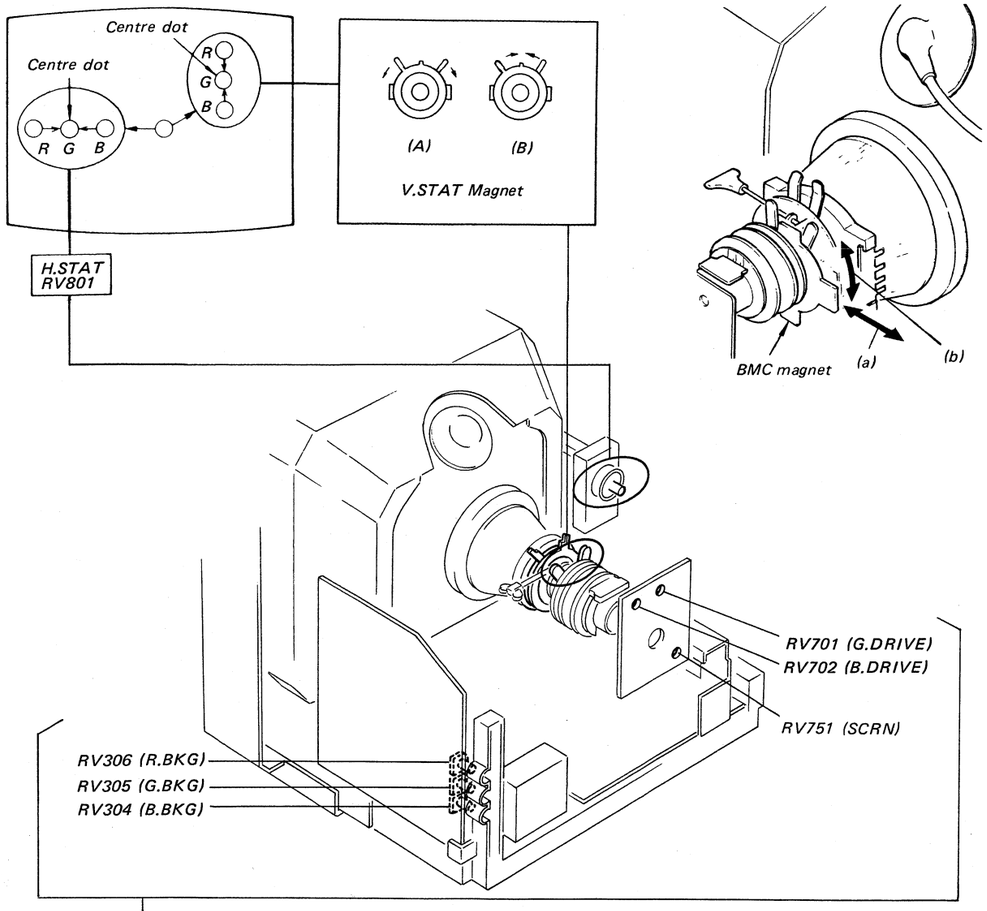
Note: *The circled numbers (① – ⑨) show above steps.*

3-2. CONVERGENCE

Preparation:

- Before starting, perform FOCUS, H.SIZE, V.SIZE AND V.LIN adjustments.
- Set BRIGHT control to fully counterclockwise.
- Feed in the dot pattern.

(1) Horizontal and Vertical Static Convergence



If blue dot does not coincide with red and green dots, perform following steps.

Move BMC magnet (a) to correct insufficient H. static convergence.

Rotate BMC magnet (b) to correct insufficient V. static convergence.

In either case, repeat Beam Landing Adjustment.

3-3. WHITE BALANCE

Feed in the cross-hatch pattern.

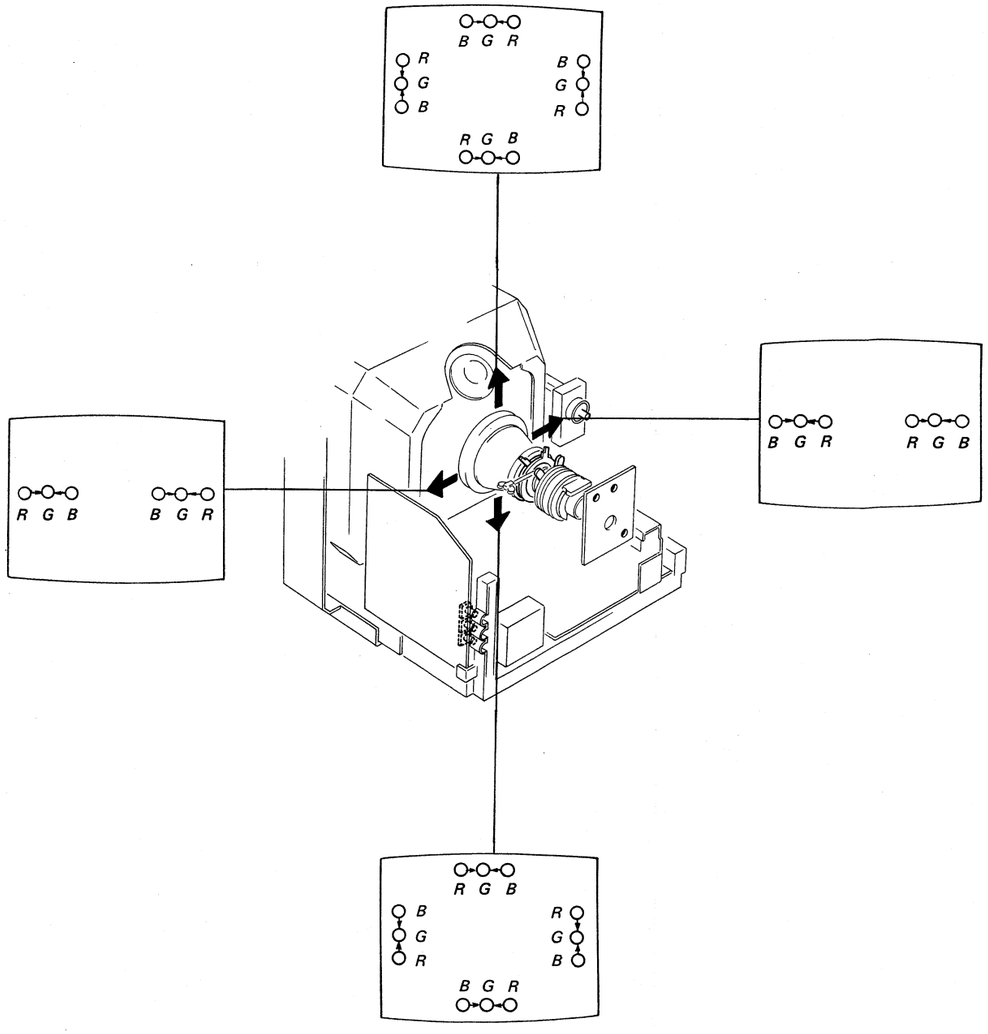
1. Turn PICTURE control fully counterclockwise, and set BRIGHT control to fully counterclockwise.
2. Turn RV701 (G.DRIVE) and RV702 (B.DRIVE) fully clockwise.
3. Set RV304 (B.BKG), RV305 (G.BKG), and RV306 (R.BKG) to mechanical center.
4. Turn RV751 (SCRN) slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning RV751. Do not turn a BKG control for this color.
5. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch.
6. Turn PICTURE and BRIGHT controls fully clockwise. Observe the screen and adjust the DRIVE controls for best white balance.
7. Repeat Steps 1 through 6 several times.

(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.



SECTION 4
CIRCUIT ADJUSTMENTS

Note: (1) TEST EQUIPMENT REQUIRED

1. Oscilloscope
2. Voltmeter (VOM)
3. Color-bar/pattern generator
4. Variable auto-transformer
5. Isolation transformer

(2) INPUT SIGNAL

When making these adjustments, supply a cross-hatch, a color-bar or an off-air signal.

(3) CONTROL SETTINGS

Controls and switch should be set as follows when making checks and adjustments unless otherwise noted.

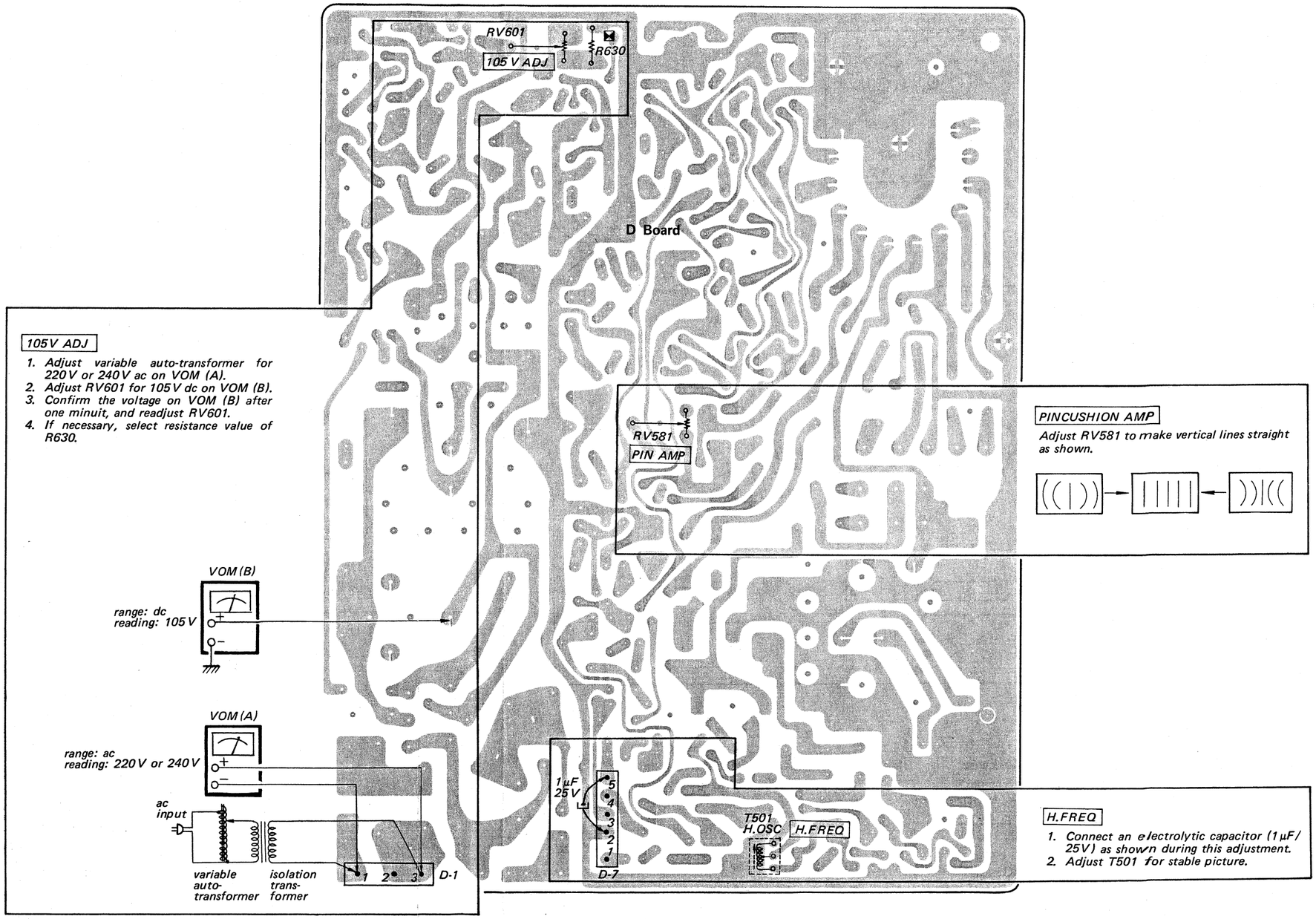
PICTURE control
BRIGHTNESS control } Set for best picture
COLOR control
AFT switch ..... ON

(4) These adjustments should be performed with rated power supply voltage, unless otherwise noted.

(5) CIRCUIT ADJUSTMENTS

Adjustment	Circuit Board	Page
105 V	D	13, 14
PINCUSHION AMP		
H.FREQ		
AFT	A	15, 16
TUNER AGC		
OSC		
4.43 MHz TRAP		
SIF		
CWT		
CW PHASE		
ACC		
DELAY LINE		
FOCUS	C	17

4-1. D BOARD ADJUSTMENTS

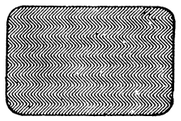


4-2. A BOARD ADJUSTMENTS

AFT

1. Tune in an off-air signal.
2. Set AFT switch to OFF (manual operation).
3. Turn tuning knob clockwise to obtain 1.07 MHz beat.
4. Set tuning knob to the point where the 1.07 MHz beat just disappears by slowly turning tuning knob counterclockwise.
5. Set AFT switch to ON. The 1.07 MHz beat will appear or "no color" will occur, if the adjustment is improper.
6. Set T282 to the point where the 1.07 MHz beat just disappears or normal color is obtainable.

1.07 MHz beat



TUNER AGC

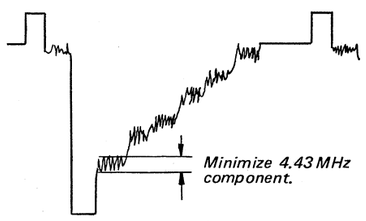
1. Tune in an off-air signal.
2. Adjust RV201 so that snow-noise and cross-modulation just disappear from the picture.

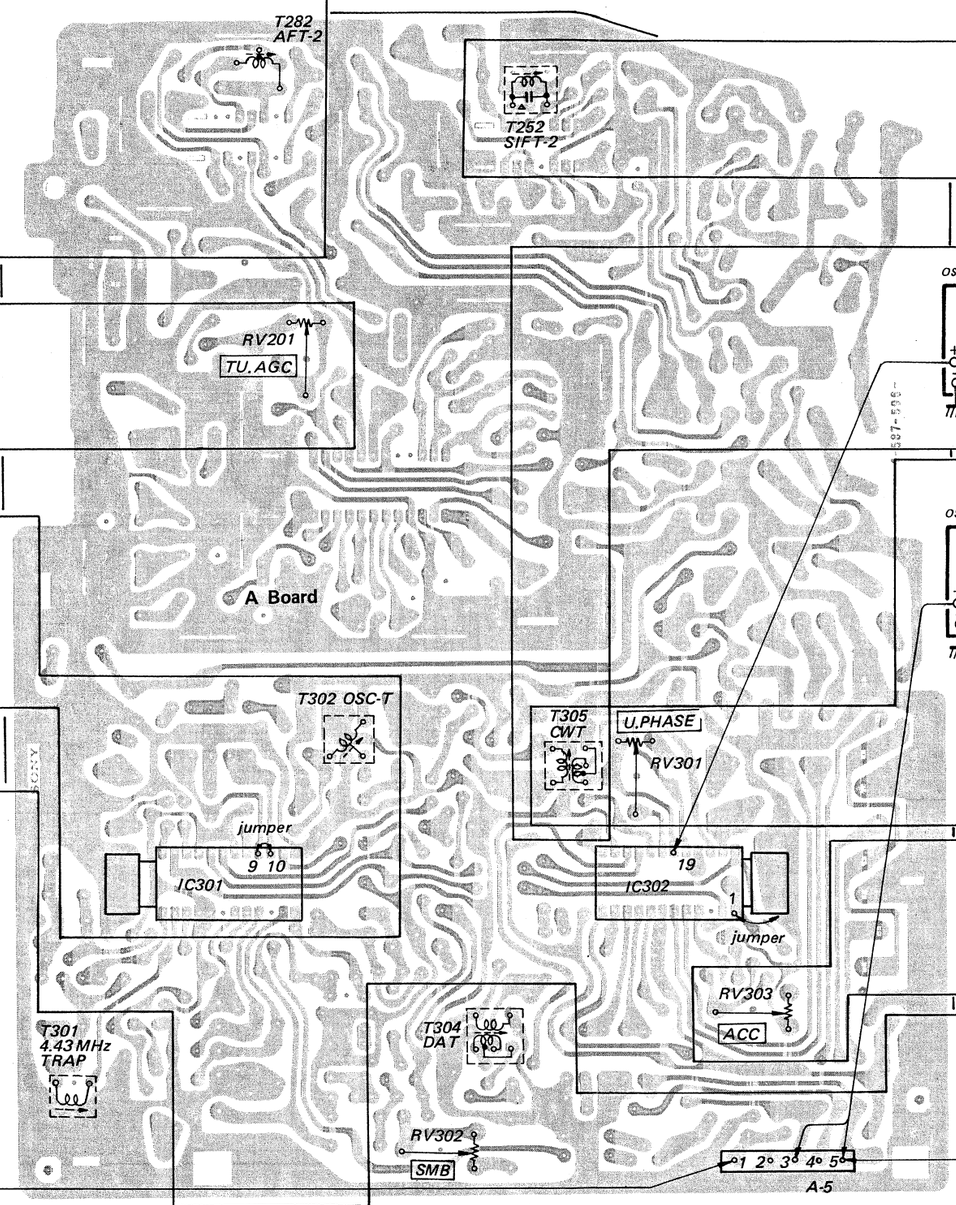
OSC

1. Feed in a color-bar signal from color-bar/pattern generator.
2. Short-circuit between the terminals 9 and 10 of IC301 with a jumper during this adjustment.
3. Adjust T302 to synchronize the color picture.

4.43 MHz TRAP

1. Feed in a color-bar signal from color-bar/pattern generator.
2. Set AFT switch to ON and COLOR control to fully counterclockwise and PICTURE control to fully clockwise.
3. Connect an oscilloscope to the terminal 1 of A-5.
4. Adjust T301 to minimize the 4.43 MHz component as shown.





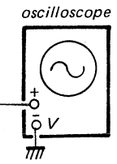
SIF

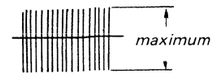
1. Tune in an off-air signal.
2. Adjust T252 for maximum clear-sound.

CWT

1. Feed in a color-bar signal from color-bar/pattern generator.
2. Adjust T305 for maximum level as shown.

oscilloscope

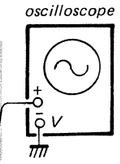




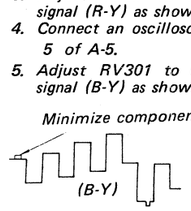
CW PHASE

1. Feed in a color-bar signal from color-bar/pattern generator.
2. Connect an oscilloscope to the terminal 3 of A-5.
3. Adjust T305 to minimize Anti-PAL signal (R-Y) as shown.
4. Connect an oscilloscope to the terminal 5 of A-5.
5. Adjust RV301 to minimize Anti-PAL signal (B-Y) as shown.

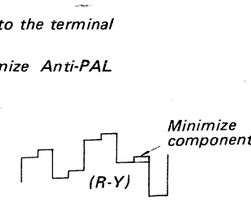
oscilloscope



Minimize component.



Minimize component.



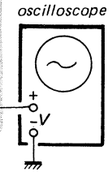
ACC

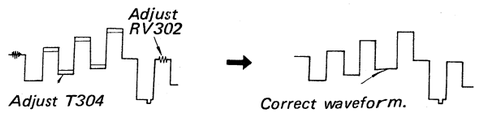
1. Tune in a strong off-air signal.
2. Set AFT switch to ON.
3. Set COLOR and PICTURE control to mechanical center.
4. Adjust RV303 for suitable color intensity.

DELAY LINE

1. Feed in a color-bar signal from color-bar/pattern generator.
2. Short-circuit the terminal 1 of IC302 to ground with a jumper during this adjustment.
3. Connect an oscilloscope to the terminal 5 of A-5.
4. Adjust RV302 and T304 for correct waveform as shown.

oscilloscope

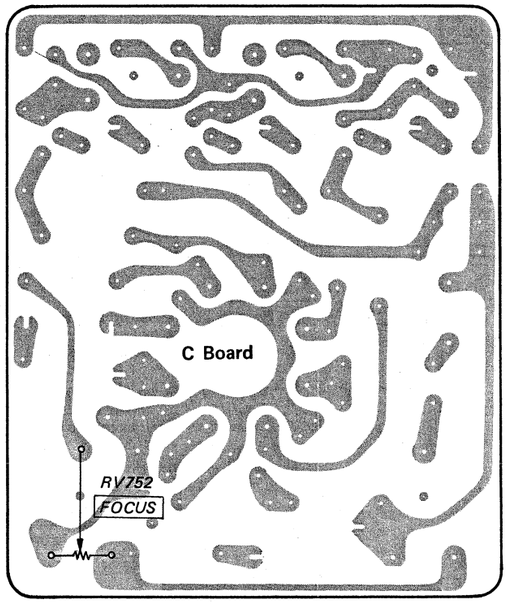




4-3. C BOARD ADJUSTMENT

FOCUS

Adjust RV752 for best FOCUS.

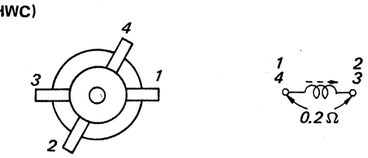


SECTION 5
DIAGRAMS

5-1. DC RESISTANCE AND WINDING DIAGRAMS OF COILS AND TRANSFORMERS

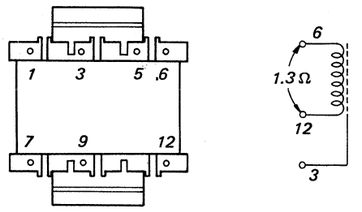
L502 (DCC)

L503 (HWC)

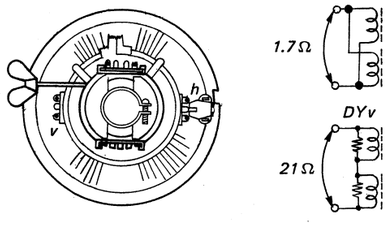


L504 (HLC)

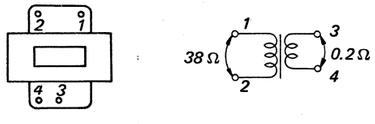
L603 (CCH)



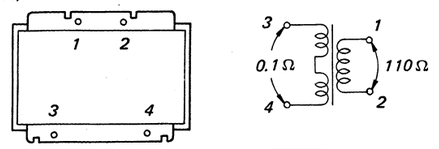
L903 (DY)



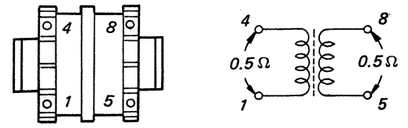
T502 (HDT)



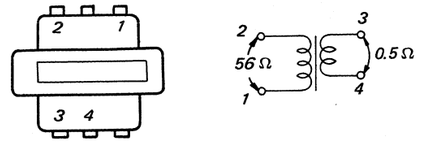
T581 (PCT-H)



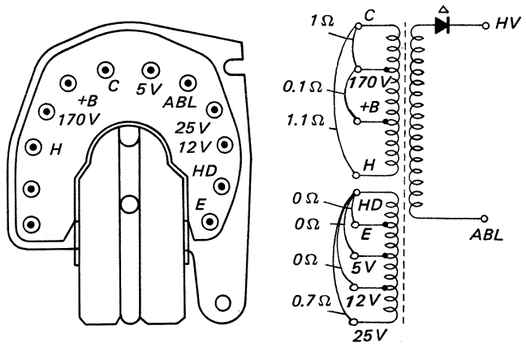
T601 (LFT)



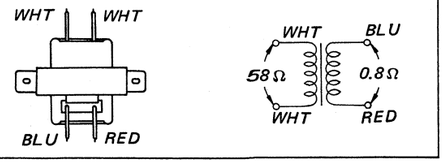
T602 (RDT)



T801 (FBT)



T901 (SOT)



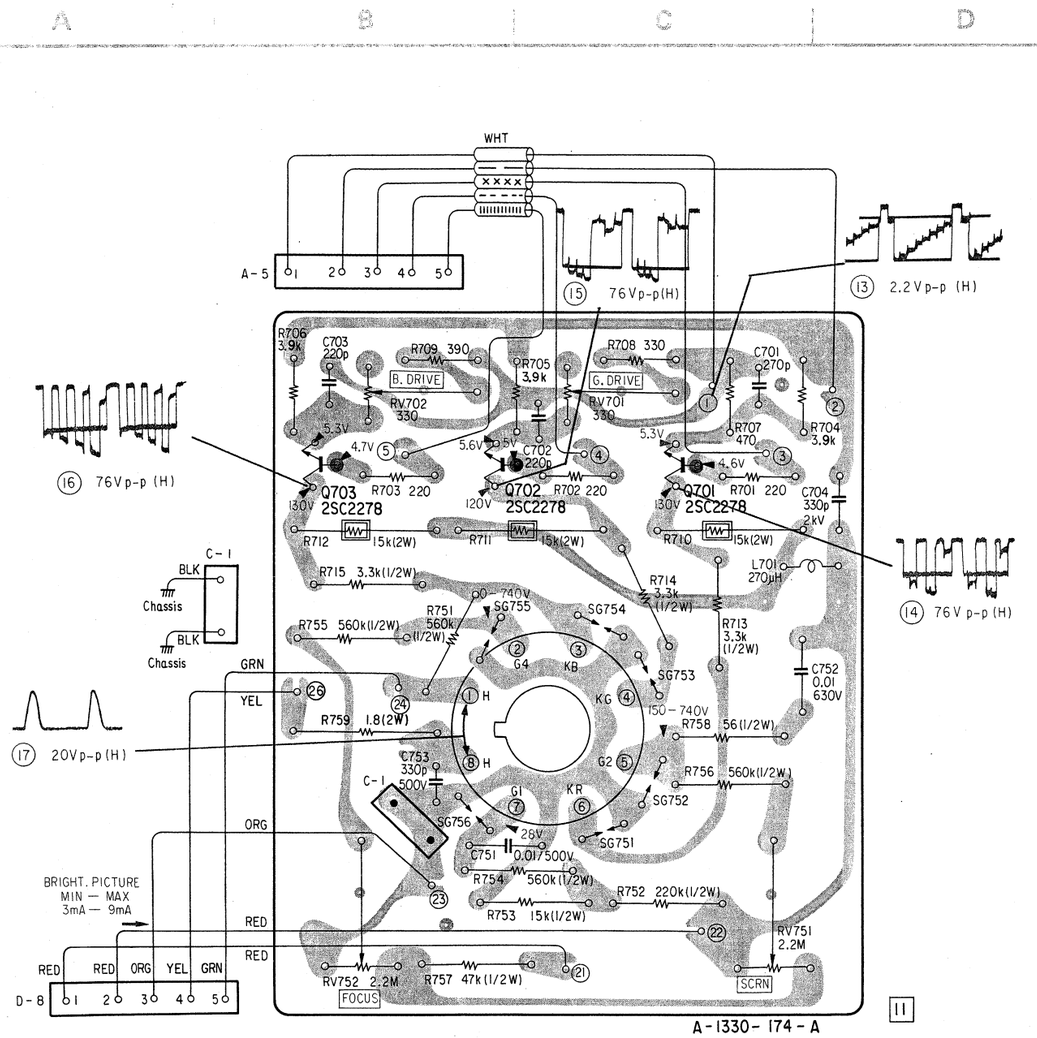
Note: DC resistance measurements shown with coils disconnected from circuit.

[R.G.B OUT] C S [PREAMP AGC BAND SW]

5-2. MOUNTING DIAGRAMS

— Conductor Side —

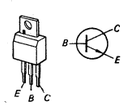
— C Board —



A-1330-174-A

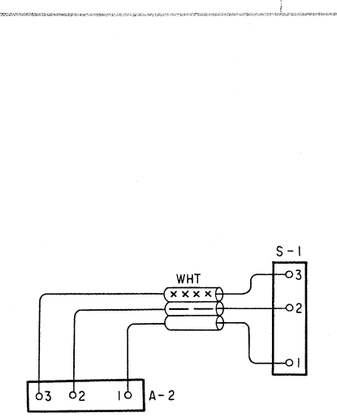
11

2SC2278

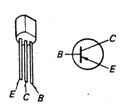


Note: ● ○—: parts extracted from the component side.
● ●—: parts extracted from the conductor side.
● ■: part mounted on the conductor side.

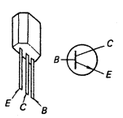
— S Board —



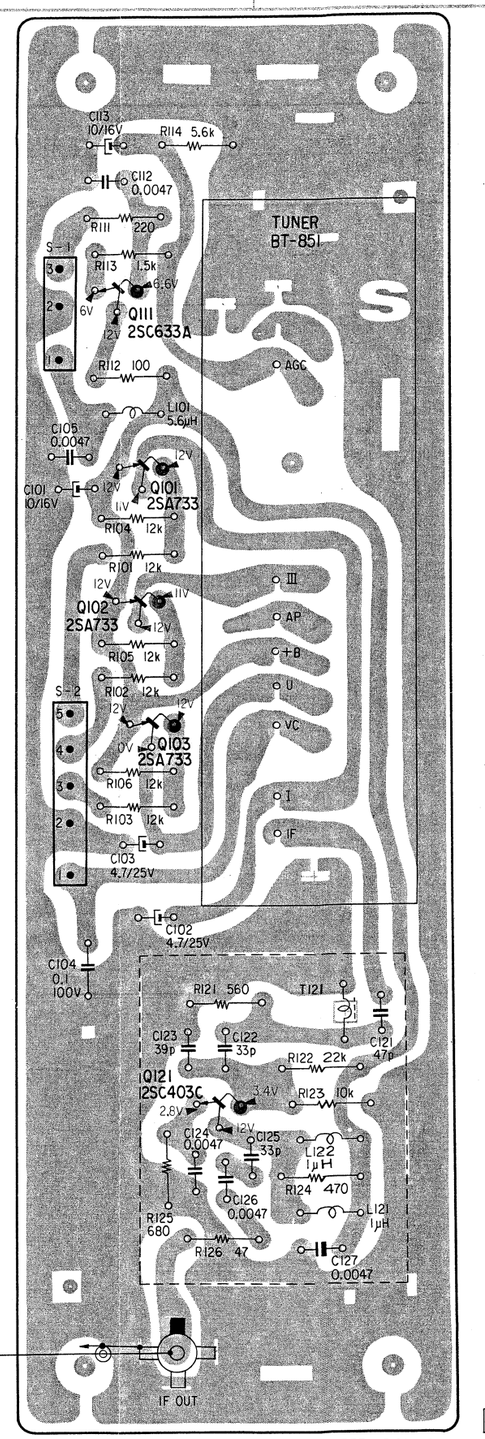
2SA733



2SC403C
2SC633A



Note: ● ○—: parts extracted from the component side.
● ●—: parts extracted from the conductor side.
● ■: part mounted on the conductor side.



A-1355-041-A

11

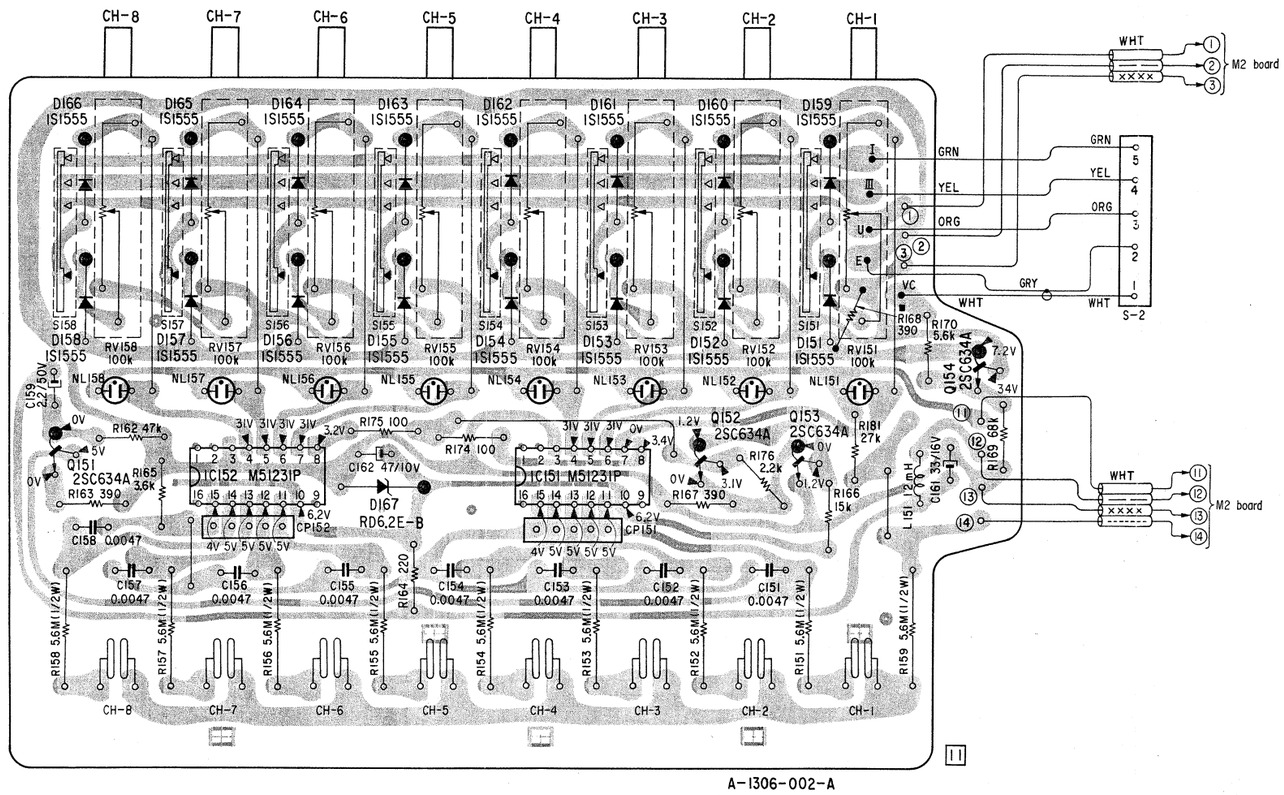
CH SELECT
BAND SW
TOUCH SENSOR

M1 **M1** **M2**

AFT
SOUND MUTE

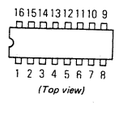
— M1 Board —

D	166 158	165 157	164 156	163 167 155	162 154	161 153	160 152	159 151
Q IC	151	IC152			IC151	152	153	154

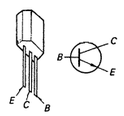


A-1306-002-A

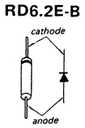
M51231P



2SC634A

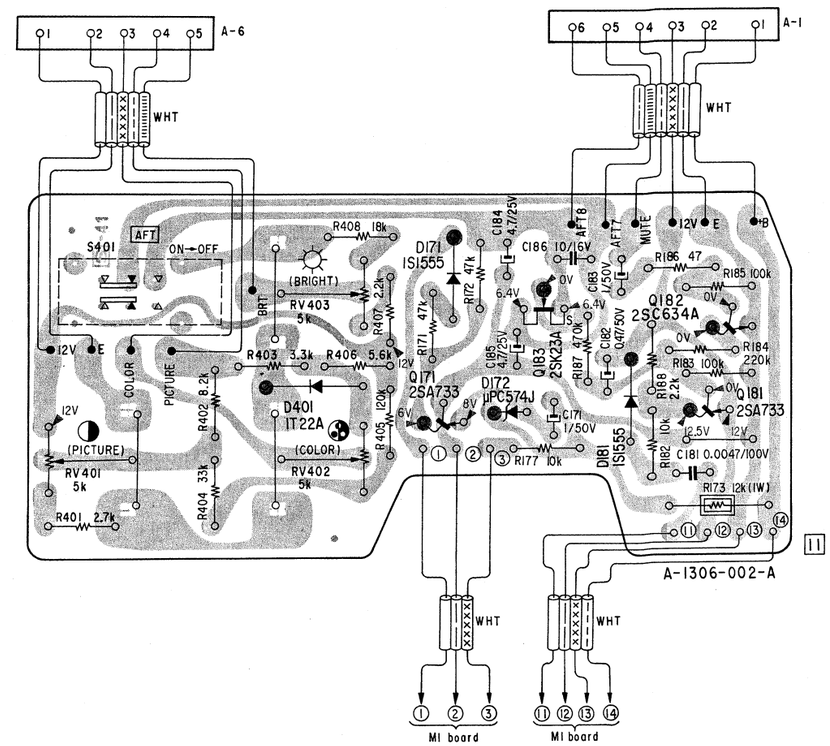


1S1555
RD6.2E-B

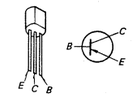


Note: ● ○— : parts extracted from the component side.
● ●— : parts extracted from the conductor side.
● ■ : part mounted on the conductor side.
● Voltages are taken with the set selected to CH-1.

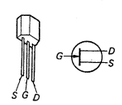
— M2 Board —



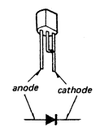
2SA733



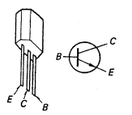
2SK23A



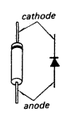
μPC574J



2SC634A



1S1555
1T22A



Note: ● ○—: parts extracted from the component side.
● ●—: parts extracted from the conductor side.

— A Board —

Note: ● ○—: parts extracted from the component side.
● ●—: parts extracted from the conductor side.

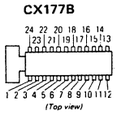
SIF, VIF, CHROMA, DEMOD
AFT, AGC, ACC, SYNC SEP **A** **A**

Q, IC	D	ADJ
		T282
		T252
IC281		
IC251		
251		
253		
252		
		RV201
IC201		
306		
305		T302
	306	RV306
		RV301
		T305
	307	
303		
		RV305
IC301		
IC302		
	305	
		RV304
304		
	304	
	301, 302	RV303
	303	T304
301		
302		
		T301
		RV302
307		

Q, IC	D	ADJ

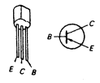
CX095C

CX108
CX109
CX177B

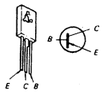


M5135P

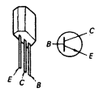
2SA733



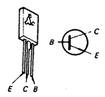
2SB649A



2SC403C
2SC633A
2SC926A

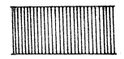


2SD669A



1S1555

IF OUT S board — GRY CLEAR

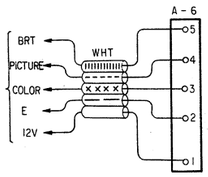


③ 1.1Vp-p (H)

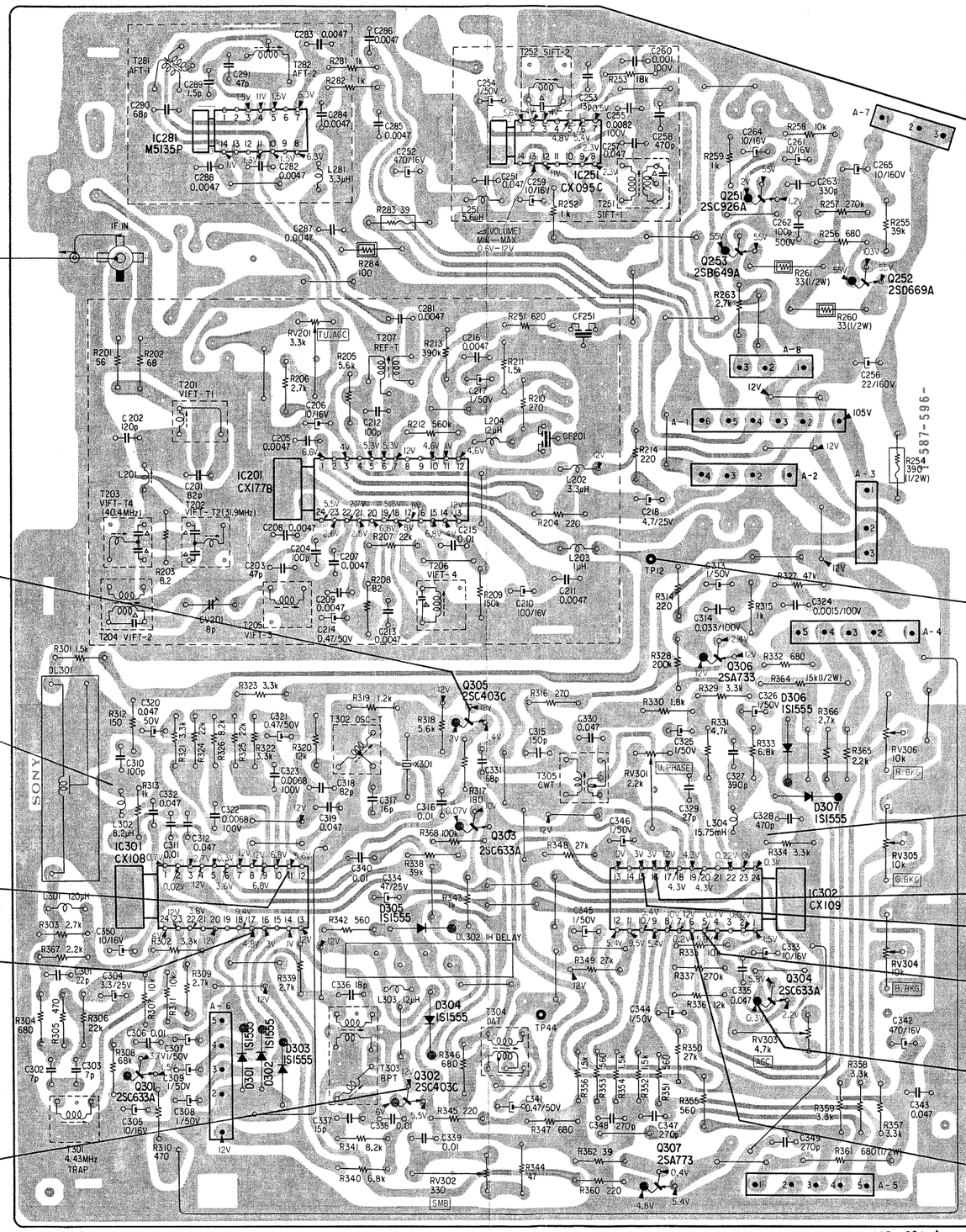
② 1Vp-p (H)

⑤ 0.9Vp-p (H)

④ 2.1Vp-p (H)



⑥ 0.5Vp-p (H)



⑫ 3.2Vp-p (H)

⑧ 0.6Vp-p (H)

⑦ 0.6Vp-p (H)

⑩ 1.5Vp-p (H)

⑨ 3Vp-p (H)

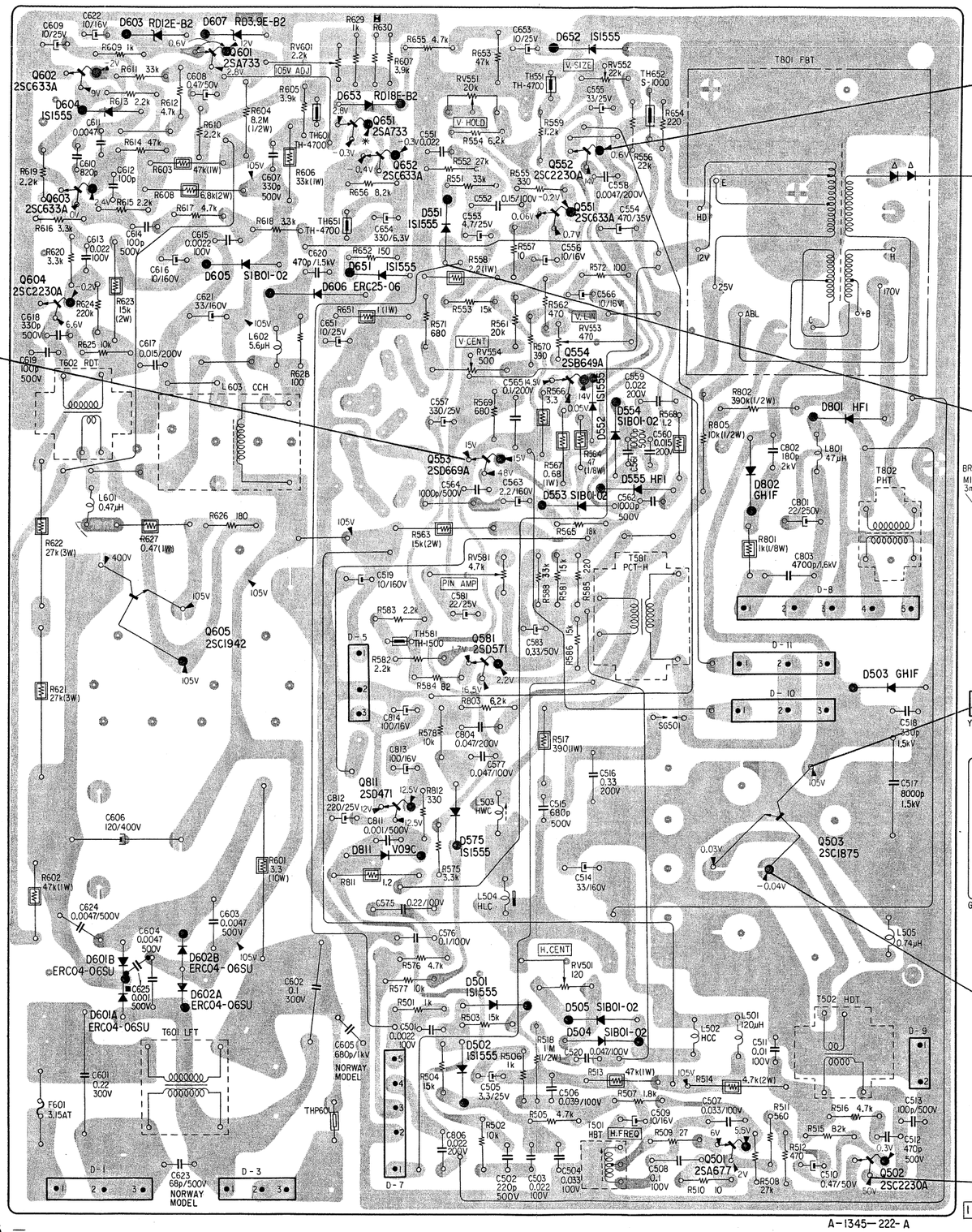
① 2Vp-p (H)

⑪ 5.2Vp-p (V)

— D Board —

Note:

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- Do not touch the base of Q651 marked ✱ with the VOM probe, as B+ voltage will not be supplied to the set.



20 0.28Vp-p (H)

21 80Vp-p (V)

18 9Vp-p(H)

19 840Vp-p (H)

22 14Vp-p (H)

23 90Vp-p (H)

Q	D	ADJ
	603 607	
601	652	RV601
602		RV552
	653	RV551
	604	
651		
652 552		
603		
551		
	551	
	605 651	
604	606	
		RV553
		RV554
554		
	552	
	801	
	554	
553		
	802	
	555	
	553	
		RV581
605		
581		
	503	
811 503	575	
	811	
	602B	
	601B	RV501
	602A	
	601A 501	
	505	
	504	
	502	
501 502		T501
Q	D	ADJ

5-3. SCHEMATIC DIAGRAM

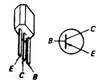
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

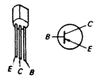
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ: 1000Ω; MΩ: 1000kΩ
- ⚠ : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ☒ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 20,000-ohm-per-volt VOM.
- Readings are taken with a color-bar signal input.
- ——— : B+ bus.
- Voltage variations may be noted due to normal production tolerances.
- ⊘ : adjustable without removing cabinet.
- ▭ : adjustment for repair.
- Voltages on M1 board are taken with the set selected to CH-1.

Semiconductors on D Board

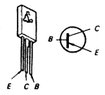
2SA677



2SA733



2SB649A



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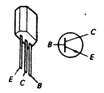
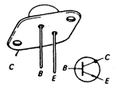
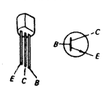


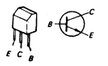
2SC1875
2SC1942



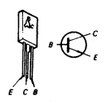
2SC2230A



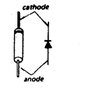
2SD471
2SD571



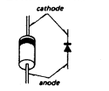
2SD669A



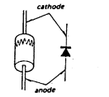
1S1555
RD3.9E
RD12E-B2
RD18-B2



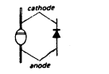
ERC04-06SU



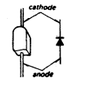
ERC25-06

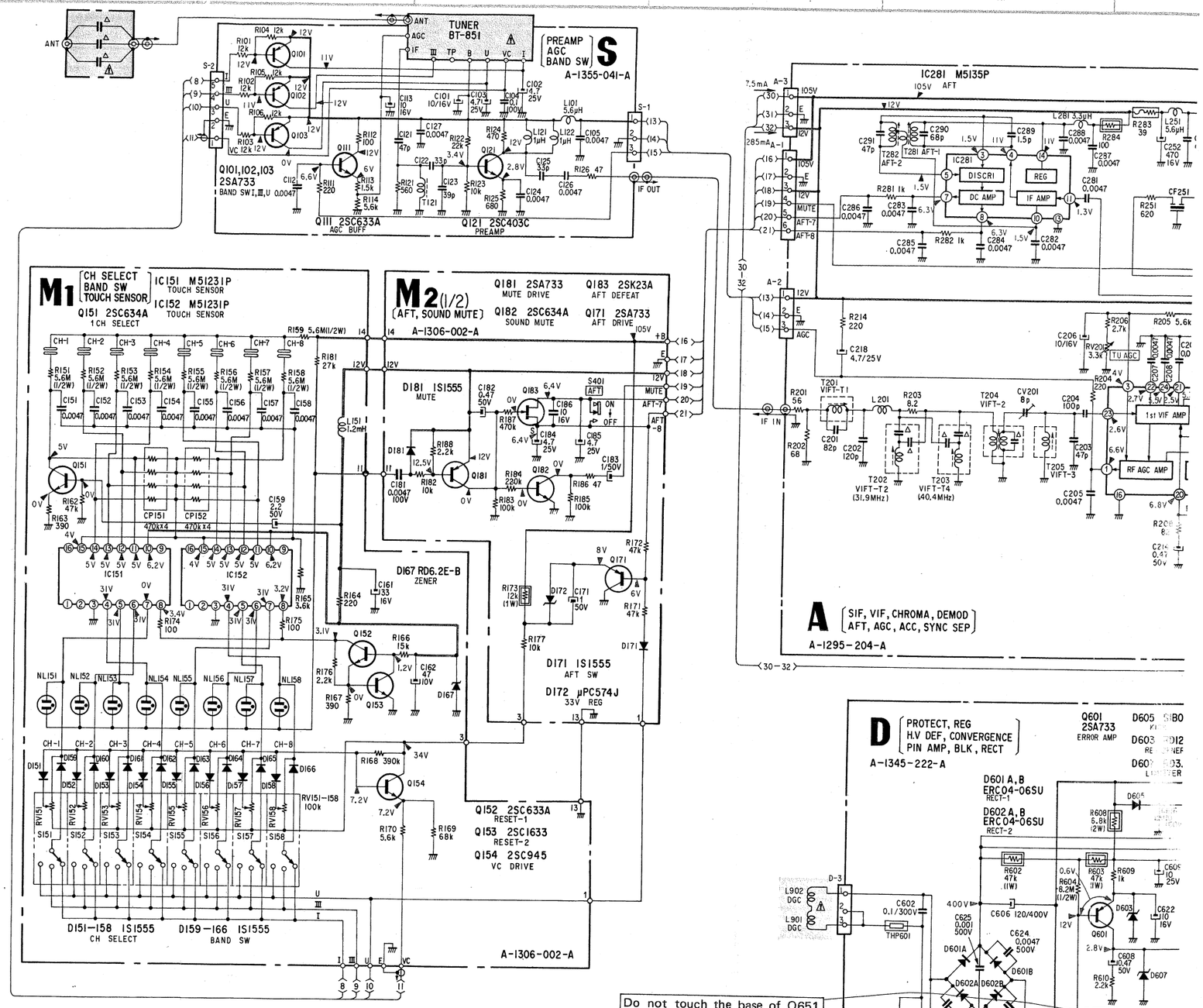


GH1F
V09C



HF1
HF1Z




TUNER BT-851
PREAMP AGC BAND SW S A-1355-041-A
Q101,102,103 2SA733
Q111 2SC633A AGC BUFF
Q121 2SC403C PREAMP
M1 CH SELECT BAND SW TOUCH SENSOR
IC151 M51231P TOUCH SENSOR
IC152 M51231P TOUCH SENSOR
Q151 2SC634A 1 CH SELECT
M2 (1/2) (AFT, SOUND MUTE) A-1306-002-A
Q181 2SA733 MUTE DRIVE
Q183 2SK23A AFT DEFEAT
Q182 2SC634A SOUND MUTE
Q171 2SA733 AFT DRIVE
D181 1S1555 MUTE
D167 RD6.2E-B ZENER
D171 1S1555 AFT SW
D172 μPC574J 33V REG
Q152 2SC633A RESET-1
Q153 2SC1633 RESET-2
Q154 2SC945 VC DRIVE
D151—158 1S1555 CH SELECT
D159—166 1S1555 BAND SW
A-1306-002-A
IC281 M5135P
A (SIF, VIF, CHROMA, DEMOD AFT, AGC, ACC, SYNC SEP) A-1295-204-A
D (PROTECT, REG H.V DEF, CONVERGENCE PIN AMP, BLK, RECT) A-1345-222-A
Q601 2SA733 ERROR AMP
D601 A,B ERC04-06SU RECT-1
D602 A,B ERC04-06SU RECT-2
Do not touch the base of Q651 with VOM probe, as B+ voltage will not be supplied to the set.
220/240V AC 50Hz
105V ADJ

M5I35P AFT

IC251 CX095C SIF

Q251 2SC926A AF AMP

Q252 2SD669A AF OUT-1

T901 SOT

SP901 8Ω

J901A (EARPHONE) J901B

D401 IT22A BIAS

M2(1/2) (CUSTOMER CONTROL)

V901 PICTURE TUBE 350LB22

BRIGHT, PICTURE MIN — MAX 3mA — 9mA

C (R,G,B OUT)

Q701 2SC2278 R.OUT

Q702 2SC2278 G.OUT

Q703 2SC2278 B.OUT

A-1330-174-A

Q305 2SC403C CW OSC

Q253 2SB649A AF OUT-2

Q301 2SC633A ABL

D301-303 IS1555 PROTECTOR

Q304 2SC633A ACC

Q302 2SC403C BPA

D304,305 IS1555 BURST SW

Q303 2SC633A BURST BLK

IC302 CX109 DEMOD

D306 IS1555 H.PULSE CLIP

D307 IS1555 V.PULSE CLIP

Q307 2SA773 Y.DRIVE

IC201 CX177B VIF

IC301 CX108 Y.AMP,CHROMA

Q306 2SA733 SYNC SEP

D501,502 IS1555 AFC-1,2

Q501 2SA677 H.OSC

Q502 2SC2230A H.DRIVE

D504,505 SIB01-02 H.CENT-1,2

Q503 2SC1875 H.OUT

Q811 2SD471 I2V.REG

D811 V09C I2V RECT

D802 GH1F G2 RECT

D801 HF1 I70V RECT

D503 GH1F DAMPER

T801 FBT

DC801 HVR BLOCK

21kV AT ZERO BEAM CURRENT

Q601 2SA733 ERROR AMP

D605 SIB01-02 KICK

Q602,603 2SC633A PWM-1,2

D603 RD12E-B2 REG ZENER

D607 RD3.9E-B2 LIMITTER

Q604 2SC2230A REG DRIVE

Q605 2SC1942 REG OUT

D606 ERC25-06 B+ RECT

D601A,B ERC04-06SU RECT-1

D602A,B ERC04-06SU RECT-2

D604 IS1555 BUILT UP

Q651 2SA733 ESS-1

Q652 2SC633A ESS-2

D651 IS1555 PROTECT RECT

D653 RD18E-B2 HOLD DOWN

D652 IS1555 PROTECT RECT

D551 IS1555 V TRIG

Q551 2SC633A V.OSC

D552 IS1555 V.BIAS

Q552 2SC2230A V.DRIVE

Q553 2SD669A V.OUT-1

Q554 2SB649A V. OUT-2

D555 HF1 24V RECT

D575 IS1555 V. BLK

Q581 2SD571 PIN AMP

D553,554 SIB01-02 V.OUT-1,2

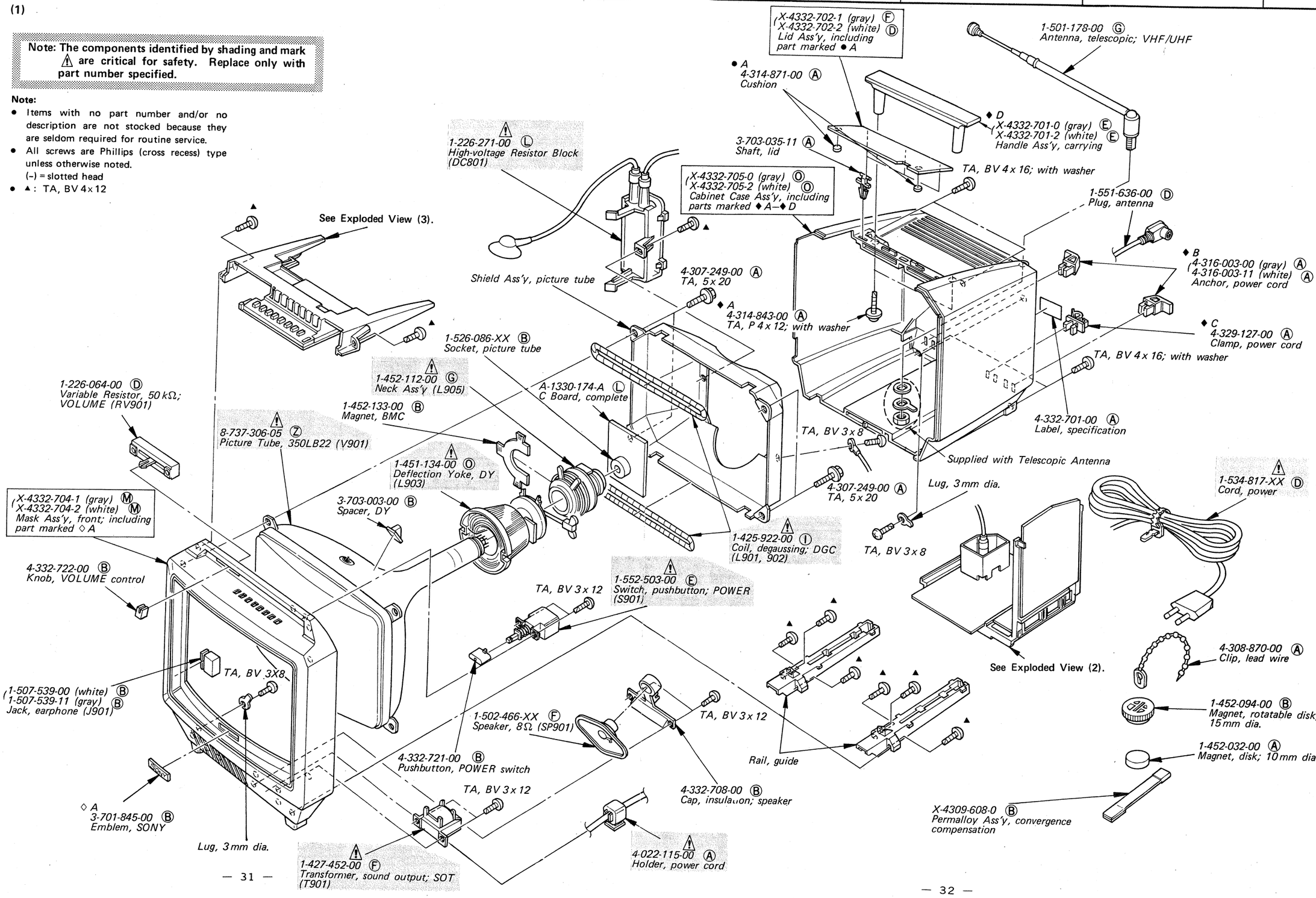
DY

(1)

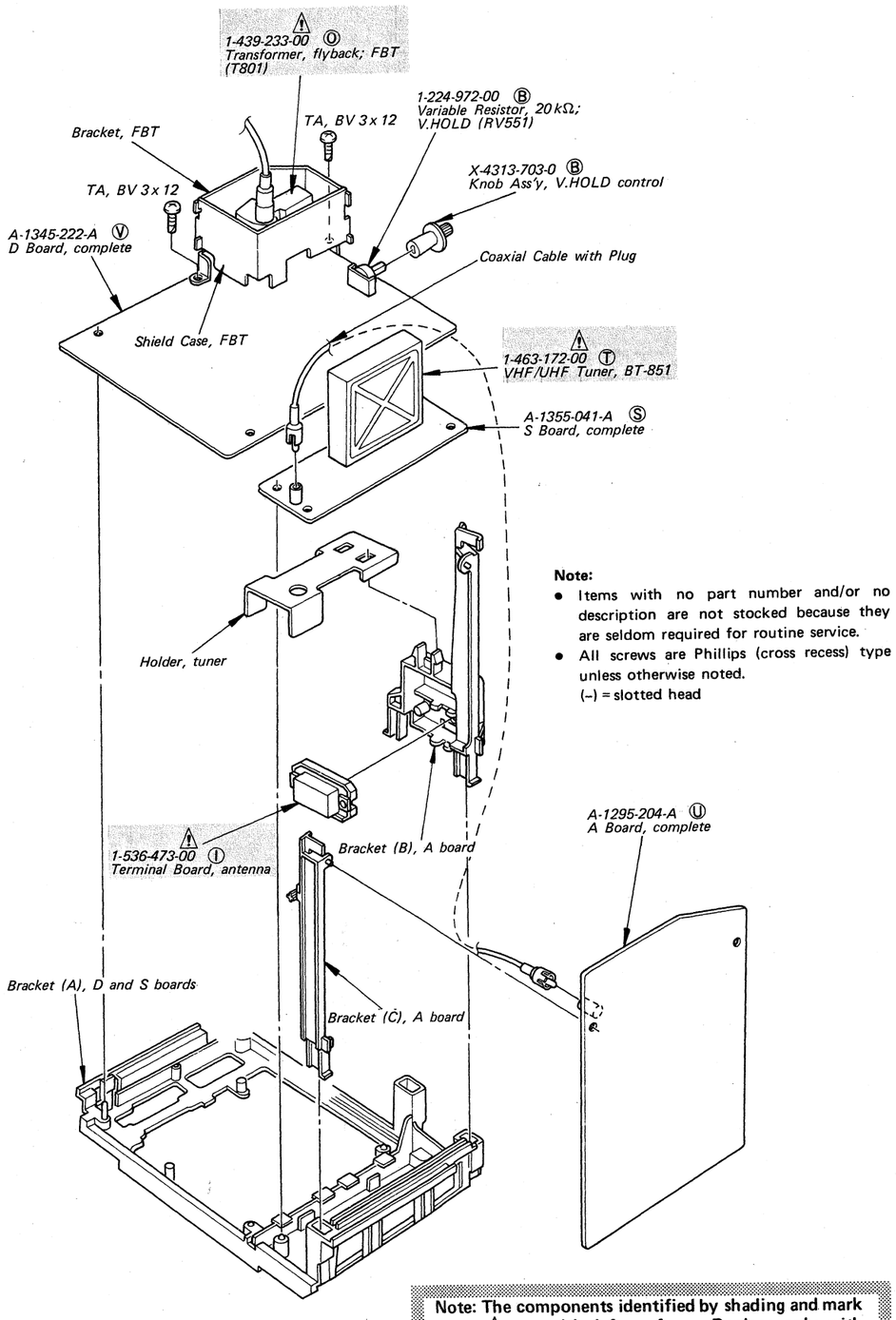
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- ▲: TA, BV 4x12



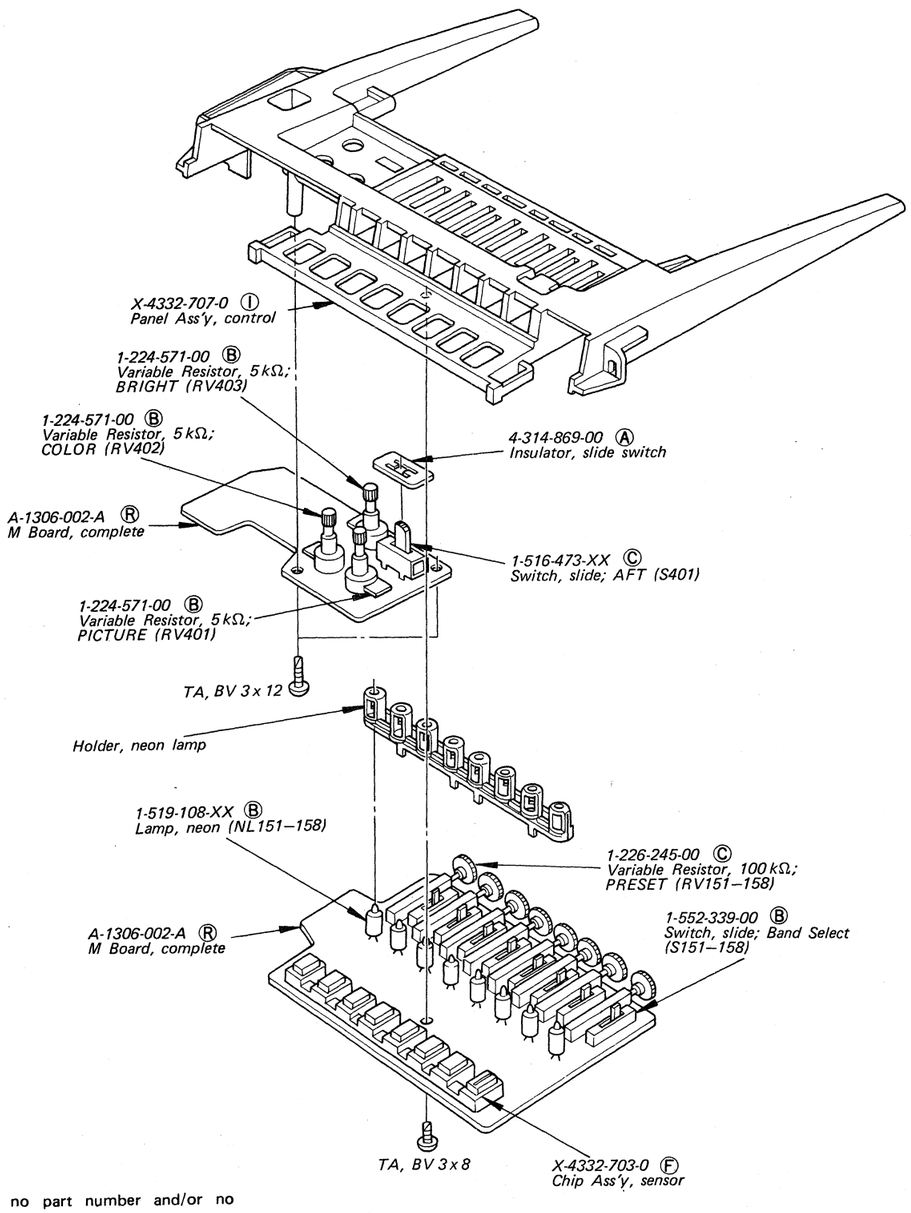
(2)



Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(3)



Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

SECTION 7
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
		TUNER AND CIRCUIT BOARDS
	A-1295-204-A	Ⓤ A Board, complete
	A-1306-002-A	Ⓡ M Board, complete
	A-1330-174-A	Ⓛ C Board, complete
	A-1345-222-A	Ⓥ D Board, complete
	A-1355-041-A	Ⓢ S Board, complete
	⚠1-463-172-00	Ⓣ VHF/UHF Tuner, BT-851
		SEMICONDUCTORS
		Transistors
Q101–103		Ⓑ 2SA733
Q111		Ⓑ 2SC633A
Q121		Ⓑ 2SC403C
Q151–154		Ⓑ 2SC634A
Q171,181		Ⓑ 2SA733
Q182		Ⓑ 2SC634A
Q183		Ⓒ 2SK23A
Q251		Ⓓ 2SC926A
Q252		Ⓒ 2SD669A
Q253		Ⓒ 2SB649A
Q301		Ⓑ 2SC633A
Q302		Ⓑ 2SC403C
Q303,304		Ⓑ 2SC633A
Q305		Ⓑ 2SC403C
Q306		Ⓑ 2SA733
Q307		Ⓑ 2SA773
Q501		Ⓑ 2SA677
Q502		Ⓚ 2SC2230A
Q503		Ⓘ 2SC1875
Q551		Ⓑ 2SC633A
Q552		Ⓚ 2SC2230A
Q553		Ⓒ 2SD669A
Q554		Ⓒ 2SB649A
Q581		Ⓑ 2SD571
Q601		Ⓑ 2SA733
Q602,603		Ⓑ 2SC633A
Q604		Ⓚ 2SC2230A
Q605		Ⓘ 2SC1942
Q651		Ⓑ 2SA733
Q652		Ⓑ 2SC634A
Q701–703		Ⓒ 2SC2278
Q811		Ⓑ 2SD471
		ICs
IC151,152		Ⓔ M51231P
IC201		Ⓘ CX177B
IC251		Ⓕ CX095C
IC281		Ⓗ M5135P
IC301		Ⓚ CX108
IC302		Ⓚ CX109
		Diodes
D151–166		Ⓑ 1S1555
D167		Ⓑ RD6.2E-B
D172		Ⓔ μPC574J
D181		Ⓑ 1S1555
D301–307		Ⓑ 1S1555
D401		Ⓐ 1T22A
D501,502		Ⓑ 1S1555
D503		Ⓓ GH1F
D504,505		Ⓑ SIB01-02
D551,552		Ⓑ 1S1555
D553,554		Ⓑ SIB01-02
D555		Ⓑ HF1
D575		Ⓑ 1S1555
D601A,B, D602A,B		Ⓒ ERC04-06SU
D603		Ⓑ RD12E-B2
D604		Ⓑ 1S1555
D605		Ⓑ SIB01-02

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.		Description
D606		Ⓒ	ERC25-06
D607		Ⓑ	RD3.9E-B2
D651,652		Ⓑ	1S1555
D653		Ⓑ	RD18E-B2
D801		Ⓑ	HF1
D802		Ⓓ	GH1F
D811		Ⓑ	V09C

Miscellaneous

TH551	1-800-070-XX	Ⓐ	Thermistor, TH-4700
TH581	1-800-069-XX	Ⓐ	Thermistor, TH-1500
TH601,651	1-800-070-XX	Ⓐ	Thermistor, TH-4700
⇒TH652	1-800-198-XX	Ⓐ	Thermistor, S-1250
THP601	1-800-665-00	Ⓒ	Thermistor (positive)

COILS

All coils are microinductors unless otherwise noted.

L101	1-407-187-XX	Ⓐ	5.6μH
L121,122	1-407-178-XX	Ⓐ	1μH
L151	1-407-718-00	Ⓐ	1.2mH
L201	1-425-613-00	Ⓑ	Coil
L202	1-407-184-XX	Ⓐ	3.3μH
L203	1-407-178-XX	Ⓐ	1μH
L204	1-407-158-XX	Ⓐ	12μH
L251	1-407-187-XX	Ⓐ	5.6μH
L281	1-407-184-XX	Ⓐ	3.3μH
L301	1-407-706-00	Ⓐ	120μH
L302	1-407-189-XX	Ⓐ	8.2μH
L303	1-407-158-XX	Ⓐ	12μH
L304	1-408-160-00	Ⓑ	15.75mH
L501	1-459-215-00	Ⓑ	120μH
L502	1-459-060-00	Ⓑ	Horizontal Centering Choke, HCC
L503	1-459-237-00	Ⓒ	Horizontal Width, HWC
L504	1-459-236-00	Ⓒ	Horizontal Linearity, HLC
L505	1-407-365-00	Ⓐ	0.74μH, spook choke
L601	1-407-365-00	Ⓐ	0.74μH, spook choke
L602	1-407-187-XX	Ⓐ	5.6μH
L603	1-421-353-00	Ⓕ	Chopper Choke, CCH
L701	1-407-174-XX	Ⓐ	270μH
L801	1-407-165-XX	Ⓐ	47μH
L901,902	⚠1-425-922-00	Ⓘ	Degaussing, DGC
L903	⚠1-451-134-00	Ⓞ	Deflection Yoke, DY
L905	⚠1-452-112-00	Ⓖ	Neck Ass'y
DL301	1-415-101-00	Ⓓ	Delay Line
DL302	1-415-131-00	Ⓙ	1H Delay Line

TRANSFORMERS AND FILTERS

CF201	1-404-134-00	Ⓑ	Ceramic Filter
CF251	1-527-263-00	Ⓑ	Ceramic Filter
T121	1-404-096-00	Ⓑ	VHF
T201	1-409-225-00	Ⓑ	VIFT-T1
T202	1-409-312-00	Ⓑ	VIFT-T2, 31.9MHz
T203	1-409-314-00	Ⓑ	VIFT-T4, 40.4MHz
T204	1-403-947-00	Ⓑ	VIFT-2
T205	1-404-047-00	Ⓑ	VIFT-3
T206	1-403-729-00	Ⓑ	VIFT-4
T207	1-404-080-00	Ⓑ	REF-2
T251	1-404-097-00	Ⓑ	SIFT-1
T252	1-403-843-00	Ⓑ	SIFT-2
T281	1-403-810-00	Ⓑ	AFT-1
T282	1-403-811-00	Ⓑ	AFT-2
T301	1-409-193-00	Ⓑ	4.43MHz Trap
T302	1-405-733-00	Ⓑ	Oscillator, OSC-T
T303	1-425-927-00	Ⓒ	Bandpass, BPT
T304	1-404-081-00	Ⓑ	Delay Adjustment, DAT
T305	1-425-928-00	Ⓑ	Continuous-wave Oscillation, CWT
T501	1-405-760-00	Ⓑ	Horizontal Blocking, HBT
T502	1-437-071-00	Ⓒ	Horizontal Drive, HDT
T581	1-421-263-00	Ⓖ	Horizontal Pincushion Correction, PCT-H
T601	⚠1-421-352-00	Ⓕ	Line Filter, LFT

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
T602	1-446-194-00	Ⓑ Regulator Drive, RDT
T801	⚠1-439-233-00	Ⓞ Flyback, FBT
T802	1-421-354-00	Ⓓ PHT
T901	⚠1-427-452-00	Ⓕ Sound Output, SOT

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics. p: μμF, elect: electrolytic

Ref. No.	Part No.	Description
C101	1-121-651-00	Ⓐ 10 16V elect
C102,103	1-121-395-00	Ⓐ 4.7 25V elect
C104	1-108-389-00	Ⓑ 0.1 100V mylar
C105,112	1-102-125-00	Ⓐ 0.0047
C113	1-121-651-00	Ⓐ 10 16V elect
C121	1-102-887-00	Ⓐ 47p
C122	1-102-884-00	Ⓐ 33p
C123	1-102-889-00	Ⓐ 39p
C124	1-102-125-00	Ⓐ 0.0047
C125	1-102-963-00	Ⓐ 33p
C126,127	1-102-125-00	Ⓐ 0.0047
C151–158	1-101-003-00	Ⓐ 0.0047
C159	1-121-450-00	Ⓐ 2.2 50V elect
C161	1-121-403-00	Ⓐ 33 16V elect
C162	1-121-352-00	Ⓐ 47 10V elect
C171	1-121-391-00	Ⓐ 1 50V elect
C181	1-108-373-00	Ⓐ 0.0047 100V mylar
C182	1-121-726-00	Ⓐ 0.47 50V elect
C183	1-121-391-00	Ⓐ 1 50V elect
C184,185	1-121-395-00	Ⓐ 4.7 25V elect
C186	1-121-806-00	Ⓑ 10 16V elect (nonpolarized)
C201	1-102-527-00	Ⓐ 82p
C202	1-102-816-00	Ⓐ 120p
C203	1-101-984-00	Ⓐ 47p
C204	1-102-973-00	Ⓐ 100p
C205	1-102-102-00	Ⓐ 0.0047
C206	1-121-651-00	Ⓐ 10 16V elect
C207–209	1-102-102-00	Ⓐ 0.0047
C210	1-121-415-00	Ⓐ 100 16V elect
C211	1-102-102-00	Ⓐ 0.0047
C212	1-102-529-00	Ⓐ 100p
C213	1-102-102-00	Ⓐ 0.0047
C214	1-121-726-00	Ⓐ 0.47 50V elect
C215	1-102-129-00	Ⓐ 0.01
C216	1-102-102-00	Ⓐ 0.0047
C217	1-121-391-00	Ⓐ 1 50V elect
C218	1-121-395-00	Ⓐ 4.7 25V elect
C251	1-101-006-00	Ⓐ 0.047
C252	1-121-426-00	Ⓑ 470 16V elect
C253	1-102-667-00	Ⓐ 13p
C254	1-121-391-00	Ⓐ 1 50V elect
C255	1-108-625-00	Ⓐ 0.0082 100V mylar
C256	1-123-253-00	Ⓑ 22 160V elect
C257	1-101-006-00	Ⓐ 0.047
C258	1-102-824-00	Ⓐ 470p
C259	1-121-651-00	Ⓐ 10 16V elect
C260	1-108-365-00	Ⓐ 0.001 100V mylar
C261	1-121-651-00	Ⓐ 10 16V elect
C262	1-101-810-00	Ⓐ 100p 500V
C263	1-102-112-00	Ⓐ 330p
C264	1-121-651-00	Ⓐ 10 16V elect
C265	1-123-251-00	Ⓑ 10 160V elect
C281–288	1-102-102-00	Ⓐ 0.0047
C289	1-101-576-00	Ⓐ 1.5p
C290	1-102-525-00	Ⓐ 68p
C291	1-102-852-00	Ⓐ 47p
C301	1-102-959-00	Ⓐ 22p
C302,303	1-102-662-00	Ⓐ 7p
C304	1-121-392-00	Ⓐ 3.3 25V elect
C305	1-121-651-00	Ⓐ 10 16V elect
C306	1-101-004-00	Ⓐ 0.01
C307–309	1-121-391-00	Ⓐ 1 50V elect
C310	1-102-973-00	Ⓐ 100p
C311	1-101-004-00	Ⓐ 0.01
C312	1-101-006-00	Ⓐ 0.047
C313	1-121-391-00	Ⓐ 1 50V elect
C314	1-108-383-00	Ⓐ 0.033 100V mylar

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description		
C315	1-101-361-00	Ⓐ 150p		
C316	1-101-004-00	Ⓐ 0.01		
C317	1-102-512-00	Ⓐ 16p		
C318	1-102-700-00	Ⓐ 82p		
C319	1-101-006-00	Ⓐ 0.047		
C320,321	1-121-726-00	Ⓐ 0.47	50V	elect
C322,323	1-108-624-00	Ⓐ 0.0068	100V	mylar
C324	1-108-367-00	Ⓐ 0.0015	100V	mylar
C325,326	1-121-391-00	Ⓐ 1	50V	elect
C327	1-102-822-00	Ⓐ 390p		
C328	1-102-824-00	Ⓐ 470p		
C329	1-102-883-00	Ⓐ 27p		
C330	1-101-006-00	Ⓐ 0.047		
C331	1-102-676-00	Ⓐ 68p		
C332	1-101-006-00	Ⓐ 0.047		
C333	1-121-651-00	Ⓐ 10	16V	elect
C334	1-121-410-00	Ⓑ 47	25V	elect
C335	1-101-006-00	Ⓐ 0.047		
C336	1-102-670-00	Ⓐ 18p		
C337	1-102-668-00	Ⓐ 15p		
C338–340	1-101-004-00	Ⓐ 0.01		
C341	1-121-726-00	Ⓐ 0.47	50V	elect
C342	1-121-426-00	Ⓑ 470	16V	elect
C343	1-101-006-00	Ⓐ 0.047		
C344–346	1-121-391-00	Ⓐ 1	50V	elect
C347–349	1-102-980-00	Ⓐ 270p		
C350	1-121-651-00	Ⓐ 10	16V	elect
C501	1-108-369-00	Ⓐ 0.0022	100V	mylar
C502	1-102-244-00	Ⓑ 220p	500V	
C503	1-108-381-00	Ⓑ 0.022	100V	mylar
C504	1-108-383-00	Ⓐ 0.033	100V	mylar
C505	1-121-392-00	Ⓐ 3.3	25V	elect
C506	1-108-384-00	Ⓐ 0.039	100V	mylar
C507	1-130-117-00	Ⓐ 0.033	100V	polyethylene
C508	1-108-389-00	Ⓐ 0.1	100V	mylar
C509	1-121-651-00	Ⓐ 10	16V	elect
C510	1-121-726-00	Ⓐ 0.47	50V	elect
C511	1-108-377-00	Ⓐ 0.01	100V	mylar
C512	1-102-232-00	Ⓐ 470p	500V	

Ref. No.	Part No.	Description		
C513	1-101-810-00	Ⓐ 100p	500V	
C514	1-121-757-00	Ⓑ 33	160V	elect
C515	1-102-002-00	Ⓐ 680p	500V	
C516	1-130-162-00	Ⓒ 0.33	200V	polyethylene
C517	1-129-940-00	Ⓒ 8000p	1.5 kV	polyethylene
C518	1-102-327-00	Ⓑ 330p	1.5 kV	
C519	1-123-254-00	Ⓑ 10	160V	elect
C520	1-108-385-00	Ⓐ 0.047	100V	mylar
C551	1-161-017-00	Ⓐ 0.022		(semiconductor)
C552	1-106-224-00	Ⓑ 0.15	100V	mylar
C553	1-121-395-00	Ⓐ 4.7	25V	elect
C554	1-121-361-00	Ⓑ 470	35V	elect
C555	1-121-404-00	Ⓐ 33	25V	elect
C556	1-131-371-00	Ⓑ 10	16V	tantalum
C557	1-121-654-00	Ⓑ 330	25V	elect
C558	1-108-417-00	Ⓑ 0.0047	200V	mylar
C559	1-108-425-00	Ⓑ 0.022	200V	mylar
C560	1-108-423-00	Ⓐ 0.015	200V	mylar
C561,562	1-101-845-00	Ⓐ 1000p	500V	
C563	1-123-267-00	Ⓑ 2.2	160V	elect
C564	1-101-845-00	Ⓐ 1000p	500V	
C565	1-108-704-00	Ⓑ 0.1	200V	mylar
C566	1-121-651-00	Ⓐ 10	16V	elect
C575	1-108-393-00	Ⓑ 0.22	100V	mylar
C576	1-108-389-00	Ⓑ 0.1	100V	mylar
C577	1-108-385-00	Ⓐ 0.047	100V	mylar
C581	1-121-480-00	Ⓐ 22	25V	elect
C583	1-123-286-00	Ⓐ 0.33	50V	elect
C601	⚠1-108-745-62	Ⓓ 0.22	300V	mylar
C602	1-108-747-00	Ⓑ 0.1	300V	mylar
C603,604	1-102-085-00	Ⓐ 0.0047	500V	
C605	1-102-219-00	Ⓐ 680p	1kV	(Norway model)
C606	1-123-128-00	Ⓔ 120	400V	elect
C607	1-102-030-00	Ⓐ 330p	500V	
C608	1-121-726-00	Ⓐ 0.47	50V	elect
C609	1-121-398-00	Ⓐ 10	25V	elect
C610	1-130-017-00	Ⓐ 820p		polyethylene
C611	1-108-234-00	Ⓐ 0.0047		mylar
C612	1-102-973-00	Ⓐ 100p		
C613	1-108-381-00	Ⓑ 0.022	100V	mylar

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.		Description		
C614	1-101-810-00	Ⓐ	100p	500V	
C615	1-108-369-00	Ⓐ	0.0022	100V	mylar
C616	1-123-254-00	Ⓑ	10	160V	elect
C617	1-108-423-00	Ⓑ	0.015	200V	mylar
C618	1-102-030-00	Ⓐ	330p	500V	
C619	1-101-810-00	Ⓐ	100p	500V	
C620	1-161-513-00	Ⓑ	470p	2kV	
C621	1-121-757-00	Ⓑ	33	160V	elect
C622	1-121-651-00	Ⓐ	10	16V	elect
C623	1-102-989-00	Ⓐ	68p	500V	(Norway model)
C624	1-102-085-00	Ⓐ	0.0047	500V	
C625	1-101-845-00	Ⓐ	0.001	500V	
C651,653	1-121-398-00	Ⓐ	10	25V	elect
C654	1-121-751-00	Ⓐ	330	6.3V	elect
C701	1-102-980-00	Ⓐ	270p		
C702,703	1-102-978-00	Ⓐ	220p		
C704	1-102-155-00	Ⓐ	330p	2kV	
C751	1-102-050-00	Ⓐ	0.01	500V	
C752	1-129-714-00	Ⓐ	0.001	630V	polyethylene
C753	1-102-030-00	Ⓐ	330p	500V	
C801	1-123-005-00	Ⓑ	22	250V	elect
C802	1-102-154-00	Ⓐ	180p	2kV	
C803	1-102-223-00	Ⓐ	4700p	1.6kV	
C804	1-108-429-00	Ⓑ	0.047	200V	mylar
C806	1-108-425-00	Ⓑ	0.022	200V	mylar
C811	1-101-845-00	Ⓐ	0.001	500V	
C812	1-121-422-00	Ⓑ	220	25V	elect
C813,814	1-121-415-00	Ⓐ	100	16V	elect
CV201	1-141-138-XX	Ⓐ	8p		trimmer

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted.
Refer to the list on the last page for their part numbers.
All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
kΩ: 1000Ω, MΩ: 1000kΩ

Ref. No.	Part No.				
R151–159	1-244-965-00	Ⓐ	5.6M	½W	carbon
R173	1-213-156-00	Ⓑ	12k	1W	metal oxide (nonflammable)
R254	1-212-996-00	Ⓐ	390	½W	fusible (nonflammable)
R260,261	1-244-875-00	Ⓐ	33	½W	carbon (nonflammable)
R283	1-217-394-00	Ⓑ	39	¼W	fusible (nonflammable)
R284	1-247-005-00	Ⓐ	100	¼W	carbon (nonflammable)
R361	1-244-869-00	Ⓐ	680	½W	carbon
R364	1-244-901-00	Ⓐ	15k	½W	carbon
R513	1-213-163-00	Ⓐ	47k	1W	metal oxide (nonflammable)
R514	1-206-680-00	Ⓐ	4.7k	2W	metal oxide (nonflammable)
R517	1-213-138-00	Ⓐ	390	1W	metal oxide (nonflammable)
R518	1-244-945-00	Ⓐ	1M	½W	carbon
R558	1-212-364-00	Ⓑ	2.2	1W	metal oxide (nonflammable)
R563	1-206-692-00	Ⓐ	15k	2W	metal oxide (nonflammable)
R564	1-244-987-00	Ⓐ	47	1/8W	carbon (nonflammable)
R566	1-246-413-00	Ⓐ	3.3	¼W	carbon (nonflammable)
R567	1-212-358-00	Ⓑ	0.68	1W	metal oxide (nonflammable)
R568	1-244-997-00	Ⓐ	1.2	¼W	carbon (nonflammable)
R601	1-205-532-00	Ⓑ	3.3	10W	cement coated (nonflammable)
R602,603	1-213-163-00	Ⓐ	47k	1W	metal oxide (nonflammable)
R604	1-202-730-00	Ⓐ	8.2M	½W	composition
R606	1-213-161-00	Ⓐ	33k	1W	metal oxide (nonflammable)
R608	1-206-684-00	Ⓐ	6.8k	2W	metal oxide (nonflammable)
R621,622	1-206-759-00	Ⓑ	27k	3W	metal oxide (nonflammable)

Ref. No.	Part No.		Description		
R623	1-206-692-00	Ⓐ	15 k	2W	metal oxide (nonflammable)
R627	1-212-356-00	Ⓑ	0.47	1W	metal oxide (nonflammable)
⊠ R630	⚠			¼W	carbon
R651	1-212-360-00	Ⓐ	1	1W	metal oxide (nonflammable)
R710–712	1-206-692-00	Ⓐ	15 k	2W	metal oxide (nonflammable)
R713–715	1-244-885-00	Ⓐ	3.3 k	½W	carbon
R751	1-244-939-00	Ⓐ	560 k	½W	carbon
R752	1-244-929-00	Ⓐ	220 k	½W	carbon
R753	1-244-901-00	Ⓐ	15 k	½W	carbon
R754–756	1-244-939-00	Ⓐ	560 k	½W	carbon
R757	1-244-913-00	Ⓐ	47 k	½W	carbon
R758	1-244-843-00	Ⓐ	56	½W	carbon
R759	1-206-445-00	Ⓐ	1.8	2W	metal oxide (nonflammable)
R801	1-247-040-00	Ⓐ	1 k	⅛W	carbon (nonflammable)
R802	1-244-935-00	Ⓐ	390 k	½W	carbon
R805	1-244-897-00	Ⓐ	10 k	½W	carbon
R811	1-210-860-00	Ⓐ	1.2	¼W	carbon (nonflammable)
R901	1-244-851-00	Ⓐ	120	½W	carbon
RV151–158	1-226-245-00	Ⓒ	100 k, variable; PRESET		
⇒ RV201	1-224-644-XX	Ⓑ	4.7 k, adjustable; TU.AGC		
RV301	1-224-643-XX	Ⓑ	2.2 k, adjustable; U.PHASE		
RV302	1-224-640-XX	Ⓑ	330, adjustable; SMB		
RV303	1-224-644-XX	Ⓑ	4.7 k, adjustable; ACC		
RV304	1-222-512-00	Ⓑ	10 k, adjustable; B.BKG		
RV305	1-222-512-00	Ⓑ	10 k, adjustable; G.BKG		
RV306	1-222-512-00	Ⓑ	10 k, adjustable. R.BKG		
RV401	1-224-571-00	Ⓑ	5 k, variable; PICTURE		
RV402	1-224-571-00	Ⓑ	5 k, variable; COLOR		
RV403	1-224-571-00	Ⓑ	5 k, variable; BRIGHT		
RV501	1-223-102-00	Ⓑ	120, adjustable; H.CENT		
RV551	1-224-972-00	Ⓑ	20 k, variable; V.HOLD		
RV552	1-226-217-00	Ⓑ	22 k, adjustable; V.SIZE		
RV553	1-224-641-XX	Ⓑ	470, adjustable; V.LIN		
RV554	1-221-970-XX	Ⓑ	500, adjustable; V.CENT		
RV581	1-224-644-XX	Ⓑ	4.7 k, adjustable; PIN AMP		
RV601	1-224-643-XX	Ⓑ	2.2 k, adjustable; 105 V ADJ		
RV701	1-224-640-XX	Ⓑ	330, adjustable; G.DRIVE		
RV702	1-224-640-XX	Ⓑ	330, adjustable; B.DRIVE		
RV751	1-226-114-00	Ⓒ	2.2 M, adjustable; SCRN		
RV752	1-226-114-00	Ⓒ	2.2 M, adjustable; FOCUS		
RV901	1-226-064-00	Ⓓ	50 k, variable; VOLUME		

MISCELLANEOUS

CP151,152	1-231-395-00	Ⓐ	470 k, encapsulated component
DC801	⚠1-226-271-00	Ⓛ	High-voltage Resistor Block
F601	⚠1-532-237-00	Ⓑ	Fuse, 3.15 AT
J901	1-507-539-00	Ⓑ	Jack, earphone (white)
	1-507-539-11	Ⓑ	Jack, earphone (gray)
NL151–158	1-519-108-XX	Ⓑ	Lamp, neon
S151–158	1-552-339-00	Ⓑ	Switch, slide; BAND SELECT
S401	1-516-473-XX	Ⓒ	Switch, slide; AFT
S901	⚠1-552-503-00	Ⓔ	Switch, pushbutton; POWER
SG501, SG751–756	1-519-063-XX	Ⓑ	Spark Gap
SP901	1-502-466-XX	Ⓕ	Speaker, 8 Ω
V901	⚠8-737-306-05	Ⓩ	Picture Tube, 350LB22
X301	1-527-274-00	Ⓖ	Crystal
	1-452-032-00	Ⓐ	Magnet, disk; 10 mm dia.
	1-452-094-00	Ⓑ	Magnet, rotatable disk; 15 mm dia.
	1-452-133-00	Ⓑ	Magnet, BMC
	1-501-178-00	Ⓖ	Antenna, telescopic; VHF/UHF
	1-526-086-XX	Ⓑ	Socket, picture tube
	⚠1-534-817-XX	Ⓓ	Cord, power
	⚠1-536-473-00	Ⓘ	Terminal Board, antenna
	1-551-636-00	Ⓓ	Plug, antenna

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

PACKING MATERIALS AND ACCESSORIES

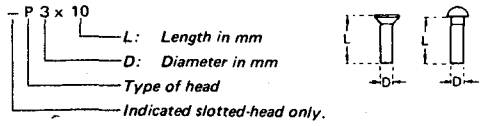
Part No.	*Description*
1-504-034-72	Ⓑ Earphone, ME-20E
3-701-329-00	Ⓐ Label, color (gray)
3-701-330-00	Ⓑ Label, color (white)
3-701-352-00	Ⓐ Bag, polyethylene
4-332-726-00	Ⓕ Carton
4-332-727-00	Ⓑ Sheet, protection
4-332-728-00	Ⓒ Cushion, right; lower
4-332-729-00	Ⓒ Cushion, left; lower
4-332-730-00	Ⓑ Cushion, right; upper
4-332-731-00	Ⓑ Cushion, left; upper
4-491-321-11	Ⓑ Manual, instruction; Norwegian
4-495-757-00	Ⓒ Manual, instruction

1/4 WATT CARBON RESISTORS Ⓐ

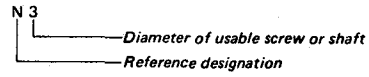
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with *spring washer*	binding-head (B) screw and *spring washer for replacement*
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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